

**PRODUCT MANUAL FOR
SODIUM NITRATE AND POTASSIUM NITRATE FOR GLASS COMPOSITIONS
ACCORDING TO IS 879: 1981**

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 879: 1981
	Title	:	Sodium Nitrite.
	No. of Amendments	:	01
2.	Sampling Guidelines:		
a)	Raw material	:	No specific requirement.
b)	Grouping guidelines	:	Not recommended.
c)	Sample Size	:	300 g minimum
3.	List of Test Equipment	:	Please refer ANNEX – <u>A</u> .
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – <u>B</u> .
5.	Possible tests in a day :		
	Description, Moisture and volatile Matter, Matter insoluble in water, Alkalinity, Chloride, Sulphate		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 879: 1981 with the following scope:		
	Name of the product	Sodium nitrite.	
	Grades	Technical and/or Analytical Reagent (AR).	
	End use for technical grade, if applicable	Heat transfer salt or explosives	

ANNEX A

List of Test Equipment

Major test equipment required to test as per the Indian Standard

S.no.	Tests used in with Clause Reference		Test Equipment
	Cl. No.	Test	
1)	(Cl. 3.2) Table 1, Sl. No. (i)	Moisture and volatile matter	i. Oven ii. Petri dish iii. Thermometer iv. Desiccator v. Weighing Balance vi. Activated Silica Gel/sulphuric Acid vii. Stoppered Weighing bottle viii. Calculator
2)	(Cl. 3.2) Table 1, Sl. No. (ii)	Assay	i. Above facilities, and ii. Volumetric flask(5ml, 10ml, 25 ml, 50ml, 100ml , 250ml , 500ml, 1000ml) iii. Burette & Stand (10ml, 20ml, 25ml (0.5ml graduation), 50m) iv. Sulphuric Acid v. Standard Potassium Permanganate Solution vi. Beaker (25ml, 50ml, 100ml, 250ml, 500ml, 1000ml, 2000ml, 5000ml) vii. Pipette (0.5ml, 1ml, 2ml, 5ml, 20ml, 25ml) viii. Hot plate/water bath ix. Measuring Cylinder x. Mixing/ Stirring Glass Rod
3)	(Cl. 3.2) Table 1, Sl. No.(iii)	Matter Insoluble in Water	i. Above facilities, and ii. Glass crucible G4 iii. Water/steam bath
4)	(Cl. 3.2) Table 1, Sl. No. (iv)	Alkalinity	i. Above facilities, and ii. Methyl Red Indicator iii. Standard Hydrochloric Acid iv. Dropper
5)	(Cl. 3.2) Table 1, Sl. No. (v)	Chloride	i. Above facilities, and ii. Nessler Cylinder - 50ml iii. Glacial Acetic Acid iv. Concentrated Nitric Acid v. Silver Nitrate Solution vi. Standard Chloride Solution vii. Standard Silver Nitrate Solution viii. Potassium Chromate Solution ix. Nitric Acid - 70% x. AR Grade Calcium Carbonate xi. Chloride Free Water xii. Timer xiii. Air Conditioner

S.no.	Tests used in with Clause Reference		Test Equipment
	Cl. No.	Test	
6)	(Cl. 3.2) Table 1 , Sl. No.(vi)	Sulphate	<ul style="list-style-type: none"> i. Above facilities, and ii. Nessler Cylinders iii. Conc. Hydrochloric Acid iv. Barium Chloride Solution v. Standard Sulphate Solution vi. Whatman Filter Paper (No. 40 & 42) vii. Test Tube viii. Volumetric flask
7)	(Cl. 3.2) Table 1 , Sl. No.(vii)	Heavy Metals	<ul style="list-style-type: none"> i. Above facilities, and ii. Standard Lead Solution iii. Acetic Acid iv. Hydrogen Sulphide Solution
8)	(Cl. 3.2) Table 1 , Sl. No.(viii)	Iron	<ul style="list-style-type: none"> i. Above facilities, and ii. Butanolic Potassium Thiocyanate Solution iii. Standard Iron Solution iv. Ammonium Persulphate v. Pot vi. Thiocyanate vii. n-butanol viii. Ferrous ammonium sulphate ix. Potassium permanganate
9)	(Cl. 3.2) Table 1 , Sl. No.(ix)	Arsenic	<ul style="list-style-type: none"> i. Above facilities and, ii. Apparatus and Solution as per Appendix A of IS 2088 iii. Dry Lead Acetate Paper iv. Cotton Wool v. Lead Acetate vi. Mercuric Bromide Paper vii. Rubber Stopper viii. Stannous Chloride ix. Potassium Iodide Solution x. Zinc xi. Tweezers xii. Arsenic solution
10)	(Cl. 3.2) Table 1 , Sl. No.(x)	Calcium & Magnesium	<ul style="list-style-type: none"> i. Above facilities and, ii. Conical flask iii. Water iv. Ammonia Ammonium Chloride Buffer v. Solution (Ammonium Hydroxide Solution & Ammonium Chloride) vi. Sodium Sulphide Solution vii. EDTA Solution viii. Methyl thymol blue indicator
11)	(Cl. 3.2) Table 1 , Sl. No.(xi)	Potassium	<ul style="list-style-type: none"> i. Above facilities and, ii. Flame Photometer

S.no.	Tests used in with Clause Reference		Test Equipment
	Cl. No.	Test	
12)	(Cl. 3.2) Table 1 , Sl. No.(xii)	Sodium Nitrate	<ul style="list-style-type: none"> i. Above facilities and, ii. Sodium Hydroxide Solution iii. Devardas Alloy iv. Kjeldahl flask v. Kjeldahl flask heater vi. Reflux condenser

a) *The above list is indicative only and may not be treated as exhaustive.*

b) *The least count, range, and other specifications of the equipment, reagents etc shall be as specified in the standard*

ANNEX 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 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. LABELLING AND MARKING –The Standard Mark as given in the Schedule of the license and Licence Number (i.e.CM/L- ...) shall be incorporated legibly and indelibly on each container/package of the product, provided always that the product thus marked conforms to specifications of the standard. Labelling/marketing and packing shall be done as per the provision of the Indian Standard. In addition, details of BIS Manakonline website shall be marked as follows: “For details of BIS certification please visit www.bis.gov.in”.

4. CONTROL UNIT/LOT– For the purpose of this Scheme, all the containers in a single consignment of Sodium Nitrite of the same grade and drawn from a single batch of manufacture, manufactured from the same plant/machinery in a day, shall constitute a control unit/lot.

4.1 In case the plant operates in several shifts, one sample may be taken from the production of each shift and mixed together to form a composite sample, on which the tests may then be conducted as per the frequency defined in the levels of control in Table 1.

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 2.0 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 provisions of BIS Act, 2016.

TABLE 1: LEVELS OF CONTROL

(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				
3.1	Description	-	-	R	One sample	Each Control Unit	See 4.1
3.2, Table 1	Moisture and volatile matter	A - 2	IS 879	R	-do-	-do-	-do-
	Assay	A - 3	-do-	R	-do-	-do-	-do-
	Matter Insoluble in Water	A - 4	-do-	R	-do-	-do-	-do-
	Alkalinity	A - 5	-do-	R	-do-	-do-	-do-
	Chloride	A - 6	-do-	R	-do-	-do-	-do-
	Sulphate	A - 7	-do-	R	-do-	-do-	-do-
	Heavy Metals	A - 8	-do-	S	-do-	Once in three months	These properties are majorly depended on quality of raw materials. Caustic soda procured is ISI marked as it is under compulsory certification from BIS. Liquid ammonia is very stable in its nature with respect to relevant properties. Unless there is a change in supplier, the properties are likely to remain same. Thus, once tested, the values may be considered to be consistent for a longer period.
	Iron	A - 9	-do-	S	-do-	-do-	
	Arsenic	A - 10	-do-	S	-do-	-do-	
	Calcium & Magnesium	A - 11	-do-	S	-do-	-do-	
	Potassium	A - 12	-do-	S	-do-	-do-	
Sodium Nitrate	A - 13	-do-	R	-do-	-do-	-	

Note-1: Whenever there is a change in raw material supplier, all tests may be carried out at the first control unit produced to ensure conformity of the product as per the standard notwithstanding the level of control mentioned above. Same may be kept in record accordingly.

Note-2: 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-3: 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 to BO Head.