



उत्पाद मानुयल
बेंज़ोइक अम्ल, खाद्य ग्रेड - विशिष्टि
IS 4448:2022 के अनुसार

PRODUCT MANUAL FOR
BENZOIC ACID, FOOD GRADE-SPECIFICATION
ACCORDING TO IS 4448: 2022

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम 2018 की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरणके प्रचलन में रीति और पारदर्शिता के सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप में 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 4448: 2022
	शीर्षक Title	:	बेंज़ोइक अम्ल, खाद्य ग्रेड - विशिष्टि Benzoic Acid, Food Grade - Specification
	संशोधन संख्या No. of Amendments	:	Nil
2.	नमूनाकरण दिशा निर्देश Sampling Guidelines:		
a)	कच्चा माल Raw material	:	No specific guidelines
b)	समूहिकरण दिशा निर्देश Grouping guidelines	:	Not applicable
c)	नमूनेका परिमाण Sample Size	:	200g
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	कृपया Annex-ए देखें Please see Annex – A
4.	निरीक्षण व परीक्षण स्कीम Scheme of Inspection and Testing	:	कृपया Annex-B देखें Please see Annex – B

5.	एक दिन में संभावित परीक्षण Possible tests in a day : (All Tests)	
	i.Reaction with ferric chloride ii.Purity iii.Sulphated ash iv.Readily carbonizable substances v.Readily oxidizable substance vi.Loss on drying vii.Chlorinated organic compounds viii.Arsenic ix.Lead	
6.	लाइसेन्स का कार्यक्षेत्र / Scope of the Licence:	
	IS 4448 : 2022 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 4448 : 2022 with the following scope:	
	उत्पाद का नाम Name of the product	बेंज़ोइक अम्ल, खाद्य ग्रेड Benzoic Acid, Food Grade

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ANNEX – A
TO PRODUCT MANUAL FOR
FOR BENZOIC ACID, FOOD GRADE ACCORDING TO IS 4448: 2022

List of test equipment

Major test equipment required to test as per the Indian Standard

Sr. No.	Tests used in with Clause Reference	Test equipment
1.	Description Cl. 3.1	Water, Chloroform, Ethanol (95 %)
2.	Identification Tests Reaction with ferric chloride Cl. 3.2	Weighing balance (L.C- 0.1 mg), calcium carbonate, Ferric Chloride, test tube, filter paper, burner
3.	Purity (as C ₇ H ₆ O ₂) Cl. 3.3, 6.1 and Table 1 (Annex A of IS 4448)	Phenol red, weighing balance (0.1mg accuracy), Measuring cylinder/ beaker, sodium hydroxide, ethanol, Phenolphthalein indicator, water, concentrated sulphuric acid, silica gel.
4.	Melting range Cl. 3.3, 6.1 and Table 1 (Annex B of IS 4448)	Capillary tube (thickness of wall 0.10 to 0.15mm, internal diameter 0.9 to 1.1 mm), melting point apparatus (with liquid paraffin or silicone oil and a stirring device, auxiliary temperature range upto 200 °C, thermometer), vacuum desiccator, sulphuric acid, standard thermometer, heater.
5.	Sulphated Ash Cl. 3.3, 6.1 and Table 1 (Annex C of IS 4448)	Weighing balance, crucible, sulphuric acid, desiccator
6.	Readily carbonizable substances Cl. 3.3, 6.1 and Table 1 (Annex D of IS 4448)	Sulphuric acid, Ferric Chloride, cobalt chloride solution, cupric sulphate, water, weighing balance, hydrochloride acid, water, measuring cylinder/ beaker, iodine flask, potassium iodide, stop watch, sodium thiosulphate, starch, hydrochloride acid. Cupric sulphate, hydrochloric acid, acetic acid, potassium iodide.
7	Readily oxidizable substances Cl. 3.3, 6.1 and Table 1 (Annex E of IS 4448)	Sulphuric acid, standard potassium permanganate solution, measuring cylinder/ beaker, heater, weighing balance
8	Loss on drying Cl. 3.3, 6.1 and Table 1	Sulphuric acid/silica gel, desiccator
9	Chlorinated organic compounds Cl. 3.3, 6.1 and Table 1 (Annex F of IS 4448)	Sodium hydroxide solution, concentrated nitric acid, calcium carbonate, nitric acid dilute, measuring cylinder/ beaker, silver nitrate solution, standard hydrochloric acid, weighing balance (L.C- 0.1 mg), filter
10	Arsenic and Lead Cl. 3.3, 6.1 and Table 1 (Cl. 15 of IS 1699)	Instrument method: Kjeldahl flask, Atomic absorption spectrophotometer, hydrochloric acid, water, sodium sulphate, sodium borohydride pellets, potassium chloride, measuring cylinder/ beaker, volumetric flask, weighing balance, heater. Chemical method: For Lead; Nitric acid, sulphuric acid, ammonium acetate-citrate solution, ammonium solution, carbon tetrachloride, ammonium hydroxide, potassium cyanide, hydroxylamine hydrochloride solution, duluzone solution, buffer pH 2. For Arsenic: Distillation apparatus, conical flask, sulphuric acid, potassium permanganate solution, ferrous sulphate, Hydrochloric acid, potassium bromine solution, aluminium stripes, tin chloride solution, test paper.

The list above is indicative only and may not be treated as exhaustive

ANNEX B
TO PRODUCT MANUAL FOR
BENZOIC ACID, FOOD GRADE ACCORDING TO IS 4448 :2022

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 Schedule of the licence shall be stenciled/printed on each container of Benzoic Acid, Food Grade or printed on the labels applied to the container, as the case may be, provided always that the material in each container to which this mark is thus applied conforms to every requirement of the specification.

3.1 Packing - The material shall be filled in amber coloured glass containers, or any other well closed containers, or suitable bag with inner lining of food grade material, with as little air space as possible. The containers shall be such as to preclude contamination of the contents with metals or other impurities.

3.2 Marking – Each container shall be legibly and indelibly marked with the information mentioned under clause 4.2.1 of IS 4448. In addition, the following details shall be mentioned on each container legibly and indelibly:

a) BIS Licence No. CM/L .

b) BIS website details i.e – “For details of BIS Certification please visit www.bis.gov.in”.

4. CONTROL UNIT – For the purpose of this scheme, Benzoic acid, Food Grade reacted, processed, dried and pulverized at a time shall constitute a control unit.

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

5.1 All the production which conforms to the Indian Standard and covered by this licence shall be marked with the Standard Mark.

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

TABLE 1 (Levels of Control)
(Para 5 of 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 Cl. Ref.	Test Method IS		No. of Sample	Frequency	Remarks
3.1	Description	3.1	IS 4448	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
3.2	Identification Tests: Reaction with ferric chloride	3.2.1 & 3.2.2	-do-	R	One sample	Each control unit	
3.3 and 6.1 & Table 1	Purity, as $C_7H_6O_2$,	Annex A	-do-	R	-do-	-do-	
-do-	Melting Range	Annex B	-do-	R	-do-	-do-	
-do-	Sulphated Ash	Annex C	-do-	R	-do-	-do-	
-do-	Readily carbonizable substances	Annex D	-do-	R	-do-	-do-	
-do-	Readily oxidizable substance	Annex E	-do-	R	-do-	-do-	
-do-	Loss on drying	3.3 and Table 1	-do-	R	-do-	-do-	
-do-	Chlorinated organic compounds	Annex F	-do-	R	-do-	-do-	
-do-	Arsenic	15	IS 1699	R	-do-	-do-	
-do-	Lead	15	IS 1699	R	-do-	-do-	

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.