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उत्पाद मैनुअल

खाद्य उत्पादों के लिये अन्नाटो रंग

IS 2557 : 2026 के अनुसार

**PRODUCT MANUAL
FOR ANNATTO COLOUR FOR FOOD PRODUCTS
ACCORDING TO IS 2557 : 2026**

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 uniformity 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.

1.	मानक संख्या IS No.	:	IS 2557 : 2026
	शीर्षक Title	:	Annatto Colour for Food Products
	संशोधनों की संख्या No. of amendments	:	NIL
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirement. Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	NA
c)	नमूने का परिमाण Sample Quantity	:	50 ml Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of

			product sample, as far as possible since raw material sample may not be available in market)
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request		Type Note: Apart from the above, 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) Colour (ii) Identification (iii) Purity Tests Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 2557 : 1994 with the following scope:		
	Name of the product	Annatto Colour for Food Products	
	Type	(a) Solution in oil for use in butter and other food products (b) Solution in water for use in cheese and other food products.	

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ANNEX – A**LIST OF TEST EQUIPMENTS****(INDICATIVE LIST, FOR GUIDANCE ONLY)**

S. No.	Tests used in with Clause Reference	Test Equipment/Chemical
1.	Colour, Clause 4.2.3 and 4.3.3	Lovibond Tintometer, cell length= 1 cm, Amyl acetate (solvent), 0.1 N Sodium hydroxide or potassium hydroxide.
2.	Identification Tests, Clause 4.4	Spectrophotometry U.V-Visible Spectrophotometer, Cuvettes.
		Column Chromatography and Carr- Price Reaction Preparation of Column Glass Tube (7×200mm internal diameter) stoppered with glass wool, Beakers, Alumina, to prepare slurry for column packing, Benzene. Annatto Extract in oil 0.1% potassium dichromate, Dry chloroform, Carr- Price Reagent, Calibrated Burettes. Water Soluble Annatto 50 ml Separating Funnel, 2 N sulphuric acid, pH Test Paper, Centrifuge Apparatus.
		<u>Thin Layer Chromatography</u> TLC Plates, Silica Gel, 12% CaSO ₄ , Acetic acid: Chloroform: Acetone(1:50:5)
3.	Purity Tests, Clause 5 & Table 1 <u>Carotenoids</u>	Annatto extract in oil U.V- Visible Spectrophotometer, 100 ml volumetric flask, Calibrated Analytical balance of L.C. 0.01 g, Burettes, Measuring cylinders, Chloroform Water soluble Annatto U.V-Visible Spectrophotometer, Calibrated Analytical balance of L.C. 0.01g, 100ml volumetric flask, 250ml Separating funnel, Burettes, 10% NaCl solution, 0.01N NaOH, Benzene, Dil.H ₂ SO ₄

	<u>Arsenic</u>	<u>Atomic absorption Spectrophotometric Method</u> Nitric acid, Distilled water or water or water distillation apparatus, Kjeldahl flask, Perchloric acid, Hydrochloric acid Arsenous oxide, Sulphuric acid, Phenolphthalein, Atomic Absorption Spectrophotometer with argon acetylene flame and hollow cathode lamp of wavelength 193.7 nm and hydride generator. <u>Chemical method</u> Guitzeit apparatus consisting of Distillation apparatus and conical flask or Modified Guitzeit apparatus, Sulphuric acid — sp gr 1.84, Potassium permanganate solution- 0.1 N, Ferrous sulphate- freshly powdered, Hydrochloric acid — 38%, Potassium bromide solution- 20%, Aluminium strips — 8 mm × 8 mm × 1 mm, Tin chloride, Test paper.
	<u>Lead</u>	<u>Atomic Absorption Spectrophotometry</u> Lead nitrate, Nitric acid, Distilled water or water distillation Apparatus, Kjeldahl flask, Perchloric acid, Hydrochloric acid, Atomic Absorption Spectrophotometer with argon acetylene flame and hollow cathode lamp of wavelength 283.3 nm, <u>Chemical Method</u> Digestion Funnel, Separatory Funnel, Nitric acid, Sulphuric acid, Ammonium citrate, Ammonium acetate, Ammonia solution, Concentrated, Dithizone, Carbon tetrachloride, Potassium cyanide, Hydroxylamine Hydrochloride, Potassium chloride, Lead nitrate.
	<u>Copper</u>	<u>Atomic Absorption Spectrophotometry</u> Lead nitrate, Nitric acid, Distilled water or water distillation Apparatus, Kjeldahl flask, Perchloric acid, Hydrochloric acid, Atomic Absorption Spectrophotometer with argon acetylene flame and hollow cathode lamp of wavelength 324.8 nm. <u>Chemical Method</u> Citric Acid- solid, Ammonium hydroxide solution- sp. gr 0.92, Conc. HCl, Dithiazone (diphenyl thiocarbazone) solution -0.1% (m/v) in chloroform, Conc. Nitric acid, Conc. Sulphuric acid, Citirc acid solution-5% (m/v) aqueous, Gum Arabic solution- 1%, Sodium diethyl dithiocarbamate solution- 0.2% (m/v), aq., Standard strong solution of copper- Standard dilute solution of copper.

ANNEXE – 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. PACKING AND MARKING– The Standard Mark, as given in the Schedule of the licence shall be incorporated legibly and indelibly on each container of Annatto colour or printed on the label applied to it, as the case may be, provided always that the material in each container to which the Mark is thus applied conforms to every requirement of the specification.

3.1 Marking – Each container shall be marked legibly and indelibly to give the information mentioned under clause 7 of IS 2557. In addition, the following information shall be clearly and indelibly marked on each container:

- a. The words “Food Grade Colour”;
- b. BIS Licence No. CM/L_____.
- c. BIS website details i.e – “For details of BIS Certification please visit www.bis.gov.in”

3.2 Packing – The material shall be filled in suitable containers with as little air space as possible so as to preclude contamination of the contents with metals or other impurities, and should preferably exclude light.

4. CONTROL UNIT –For the purpose of this scheme, Annatto Colour processed in a mixer in one operation shall be considered as 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.

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

5.2 A sample shall be drawn from each control unit and when tested shall satisfy all the requirements given in the specification. If the sample fails, the entire material in the control unit shall be considered as unfit for the purpose of marking.

6. RAW MATERIAL – The material shall be derived only from the plant *Bixa Orellana* L. and shall not contain any extraneous colouring matter.

6.1 Solution of Annatto colour in oil for use in Butter and other food products shall be according to clause 4.2.1, 4.2.2 and 4.2.3 of IS 2557.

6.2 Solution of Annatto colour in water for use in cheese and other food products shall be according to clause 4.3.1, 4.3.2 and 4.3.3 of IS 2557.

7. HYGIENIC CONDITIONS – The material shall be processed, packed, stored and distributed under hygienic conditions in licenced premises (see IS 2491).

8. 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		
Clause	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Cl.	Ref.				
4.2.3 & 4.3.3	Colour	4.2.3 & 4.3.3	IS 2557	R	One	Every Control Unit	
4.4	Identification	4.4	-do-	R	-do-	-do-	
5 & Table 1	Purity Test						
(i)	Carotenoids	Annex-A	-do-	R	-do-	-do-	
	a) Annatto extract in oil, expressed as bixin						
	b) Water soluble Annatto, expressed as norbixin	-do-	-do-	R	-do-	-do-	
(ii)	Arsenic	--	IS 1699	R	-do-	-do-	
(iii)	Lead	--	-do-	R	-do-	-do-	
(iv)	Copper	--	-do-	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 empaneled 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.