



उत्पाद मैनुअल
कार्मोसीन, खाद्य ग्रेड - विशिष्टि
IS 2923:2024 के अनुसार

PRODUCT MANUAL
FOR Carmoisine, food grade - Specification
ACCORDING TO IS 2923:2024

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 2923:2024
	शीर्षक Title	:	Carmoisine, food grade - 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	:	Not applicable

c)	नमूने का परिमाण Sample Quantity	:	50 g 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)
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer to Annex-A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer to Annex-B
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	(i) Copper (ii) Lead (iii) Lead (iv) Arsenic (v) Mercury (vi) Cadmium (vii) Water insoluble matter 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 2923:2024 with the following scope:		
	Name of the product	Carmoisine, food grade - Specification	

BUREAU OF INDIAN STANDARDS
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ANNEX – A

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests Used In With Clause Reference	Test Equipment/Chemical
1	Total dye content, Cl. 3.2	Spectrophotometric method (Reference method): Spectrophotometer (with properly calibrated scales for both wave length and optical density) or Spectrocolorimeter, Volumetric flasks of varying capacities, Analytical balance, drying oven (LC-1°C), 0.1 N Hydrochloric acid. Titanium Trichloride method Analytical balance, Heating mantle or Water bath, Volumetric flasks of varying capacities, sodium citrate, 0.1 N standard potassium dichromate solution, 0.1 N standard Titanium trichloride solution, concentrated Hydrochloric acid, Ferrous ammonium sulphate, carbon dioxide, sulphuric acid, ammonium thiocyanate.
2	Loss on drying at 135 °C, and Chlorides and sulphates expressed as sodium salt, Cl. 3.2	Weighing balance, weighing bottle fitted with a ground-glass lid, hot air oven, desiccator Determination of chloride as sodium chloride: Potentiometric titration apparatus, with silver indicator electrode, calomel reference electrode, saturated potassium sulphate bridge or glass electrode, weighing balance, 1.5 N Nitric acid, 0.1 N silver nitrate solution Determination of sulphate as sodium sulphate: Analytical balance, water bath, Hot plate, Muffle furnace, Ignition crucible, Sulphate-free sodium chloride, Saturated sodium chloride solution, Filter funnel, Filter paper, Pipettes, flasks of varying capacities, Hydrochloric acid, 0.25 N Barium chloride solution
3	Water-insoluble matter, Cl. 3.2	Prepared Gooch crucible or sintered glass funnel Grade 4, Analytical balance, hot plate, drying oven.
4	Combined ether extracts, Cl. 3.2	Separators or continuous extractor of 250 ml capacity, water /steam bath, weighing balance, evaporating dish, desiccator, Isopropyl ether, 0.5 N sodium hydroxide, saturated ferrous sulphate solution, 10% sodium hydroxide solution, Dilute Hydrochloric acid

5	Subsidiary dyes, Cl. 3.2	Chromatography tank and ancillary equipment (as per clause 9.2.1 of IS 1699), Microsyringe, Spectrophotometer, drying cabinet, filter funnel, filter paper, developing solvent [(Butan-2-one : acetone : water : ammonia (sp gr 0.880) (700 : 300 : 300 : 2)], acetone, 0.05 N sodium bicarbonate
6	Dye intermediates, Cl. 3.2	Routine method Chromatography Tank and Ancillary Equipment (as per clause 9.2.1 of IS 1699), Microsyringe, Ultraviolet Lamp (at 365.5 nm), Drying oven, Whatman No. 1 filter paper, ammonium hydroxide solution, 1-Naphthylamine-4-Sulphonic Acid, 2-Naphtho13 : 6 Disulphonic Acid, Developing Solvent [sodium bicarbonate solution (10 percent m/v)] Reference Method Chromatographic tube, Spectrophotometer with UV range, Whatman powdered cellulose (or equivalent), ammonium sulphate
7	Unsulphonated primary aromatic amines, Cl. 3.2	Visible Range Spectrophotometer. Spectrophotometer Cells — 40 mm path length REAGENTS Toluene Hydrochloric Acid — 1 N Hydrochloric Acid — 3 N Potassium Bromide — 50 percent solution Sodium Carbonate Solution — 2 N Sodium Hydroxide — 1 N Sodium Hydroxide — 0.1 N R Salt (2-naphthol-3, 6-disulphonic acid, disodium salt) Solution — 0.05 N Sodium Nitrite Solution — 0.5 N Aniline
8	Lead, Cl. 3.2	Instrumental Method (Referee method) Weighing balance, hot plate 50 ml one-mark graduated flask, 100 ml one-mark volumetric flasks, Modified Kjeldahl flask (as per Fig 4 of IS 1699), Atomic absorption spectrophotometer (with Hydride generation vessel accessory and potentiometric recorder), nitric acid, Perchloric acid, Sulphuric acid, Hydrochloric acid, metal-free Distilled water, Sodium sulphate, Sodium borohydride pellets, Potassium chloride, standard lead solution <i>Note: Reagents shall be of an order of purity higher than accepted analytical reagent grade quality.</i>

		Chemical Method Digestion funnel, separatory funnel, Hot plate, Nitric acid, Sulphuric acid, Ammonium acetate-citrate solution, ammonia solution, Carbon tetrachloride, Ammonium hydroxide, Potassium cyanide, Hydroxylamine hydrochloride solution, Dithizone solution, pH 2 buffer,
9	Arsenic, Cl. 3.2	Instrumental Method (Referee method) Weighing balance, hot plate 50 ml one-mark graduated flask, 100 ml one-mark volumetric flasks, Modified Kjeldahl flask (as per Fig 4 of IS 1699), Atomic absorption spectrophotometer (with Hydride generation vessel accessory and potentiometric recorder), nitric acid, Perchloric acid, Sulphuric acid, Hydrochloric acid, metal-free Distilled water, Sodium sulphate, Sodium borohydride pellets, Potassium chloride, standard lead solution <i>Note: Reagents shall be of an order of purity higher than accepted analytical reagent grade quality.</i> Chemical Method Method 1: Distillation apparatus (as per Fig 6 of IS 1699), conical flask (as per Fig 7 of IS 1699), microburner, water bath, Sulphuric acid, potassium permanganate, ferrous sulphate, Hydrochloric acid, Potassium bromide solution, Aluminium strips, Tin chloride solution, Test paper (dried strips of filter paper in saturated ethanolic solution of mercuric bromide), nitric acid, distilled water Method 2 (Modified Gutzeit method) Distillation setup, Modified Gutzeit apparatus/Spectrophotometer, Weighing balance, Distilled water, Concentrated Hydrochloric acid, Hydrazine Sulphate, Sodium Bromide, Lead Acetate, Filter paper strips, Absorbent Cotton Wool, Mercuric Bromide Paper, Dilute Sulphuric Acid, Potassium Iodide, Stannous Chloride, Zinc granules, Arsenic trioxide, Sodium hydroxide.
10	Mercury, Cl. 3.2	Instrumental method (Atomic Absorption Cold Vapour Technique as per Cl. 15.1.8 of IS 1699) Atomic absorption spectrophotometer, mineralization apparatus, bubblers, water vapour absorption apparatus and other standard laboratory apparatus. Special reagents: Nitric Acid (sp gr 1.40), Sulphuric Acid (sp gr 1.84), Sulphuric Acid –

		3.5M approx., Sulphuric Acid-1.0 M approx., Hydrochloric acid (sp gr 1.18), Potassium Permanganate Solution 50 g/L, Hydroxylamine Hydrochloride Solution-10 g/L, stannous chloride solution, Chromic acid mixture, magnesium perchlorate, mercuric chloride and other standard laboratory reagents
11	Copper, Cl. 3.2	Chemical Method Tube of heat resistant glass, litmus paper, separating funnel, water bath, hot plate, standard laboratory apparatus and glassware Citric Acid-solid, ammonium hydroxide solution – sp gr 0.92 (not less than 27% ammonia), concentrated hydrochloric acid, dithizone (diphenyl thiocarbazon) solution - 1% m/v in chloroform, concentrated nitric acid, concentrated sulphuric acid, citric acid solution – 5% aqueous, gum arabic solution – 1%, sodium diethyl dithiocarbamate solution -0.2% m/v, standard strong solution of copper, standard dilute solution of copper, and other standard laboratory reagents
12	Chromium, Cl. 3.2	Chemical method Quartz Dishes-2, Heating oven, water bath, watch glass, standard laboratory apparatus and glassware Magnesium nitrate solution -25% m/v, Strong sulphuric acid solution – 4 N, Potassium Permanganate solution – 0.1 N, sodium azide solution -5% m/v, diphenylcarbazide solution, standard chromium solution, and other standard laboratory reagents
13	Cadmium, Cl. 3.2	Instrumental Method Kjeldahl flasks, Atomic Absorption Spectrophotometer with hydride generation vessel accessory (wavelength 228.8 and gases Air/Acetylene) and other standard laboratory glassware and apparatus Reagents: Nitric Acid sp gr 1.42, perchloric acid – 60% (m/m), sulphuric acid – 98%, hydrochloric acid – 5 N solution, water – metal free, sodium sulphate, sodium borohydride pellets, potassium chloride, and other standard laboratory reagents

ANNEX B

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is : Entire quantity of carmoisine, food grade blended at one time.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on each container provided always that the material so marked conforms to each requirement of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 Additional Marking requirements: The material shall also be marked with the following additional requirement on each container:

a) “For BIS certification details please visit www.bis.gov.in”

4. HYGIENIC CONDITIONS – The material shall be processed, packed, stored and distributed under hygienic conditions (See IS 2491). All the processing equipment should be properly cleaned and care should be taken to prevent infestation.

5. REJECTION - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. 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
(ONLY FOR GUIDANCE PURPOSE)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or)S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test MethodsClause Reference			No. of Sample	Frequency	Remarks
i.	Total dye content	Annex A	IS 2923	R	Two	Each control unit	
ii.	Loss on drying at 135 °C, and Chlorides and sulphates expressed as sodium salt		IS 1699	R	One	Each control unit	
iii.	Water-insoluble matter		IS 1699	R	One	Each control unit	
iv.	Combined ether extracts		IS 1699	R	One	Each control unit	
v.	Subsidiary dyes	Annex B	IS 2923	R	One	Each control unit	
vi.	Dye intermediates	Annex C	IS 2923	R	One	Each control unit	
vii.	Unsulphonated primary aromatic amines	Annex D	IS 2923	R	One	Each control unit	
viii.	Lead		IS 1699	R	One	Each control unit	
ix.	Arsenic		IS 1699	R	One	Each control unit	
x.	Mercury		IS 1699	R	One	Each control unit	
xi.	Copper		IS 1699	R	One	Each control unit	
xii.	Chromium		IS 1699	R	One	Each control unit	
xiii.	Cadmium		IS 1699	R	One	Each control unit	