

SRI LANKA STANDARD 594:1982
UDC 664.099.62:667.283.8 ERY

SPECIFICATION FOR
FOOD ADDITIVES COLOURING MATTERS
ERYTHROSINE BS

BUREAU OF CEYLON STANDARDS

SPECIFICATION FOR FOOD ADDITIVES COLOURING
MATTER ERYTHROSINE BS

SLS 594:1982

Gr.5

Copyright Reserved

BUREAU OF CEYLON STANDARDS

53, Dharmapala Mawatha,

Colombo 3,

Sri Lanka.

CONSTITUTION OF THE DRAFTING COMMITTEE

CHAIRMAN

Mr. T. Kandasamy

REPRESENTING

Government Analyst's Department

MEMBERS

Mr. P.S. Arasakumar

Mrs. M. J. de Silva

Mrs. Chandra Dissanayake

Mrs. S. Jayasinghe

Mr. D.S.R. Nanayakkara

Dr. W.D.A. Perera

Mrs. G.N. Perera

Mr. T. Shanmugarathna

Mr. A.M.L.B. Somarathna

Mr. V.R.W. Suriyarachchi

Lever Brothers Limited

City Analyst's Laboratory

School of Home Economics

Ceylon Institute of Scientific
and Industrial Research

Ceylon Cold Stores

Medical Research Institute

Perera & Sons Limited

Baur & Company Limited

Marketing Department

National Milk Board

TECHNICAL SECRETARIAT BUREAU OF CEYLON STANDARDS

Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This standard does not purport to include all the necessary provisions of a contract.

SRI LANKA STANDARD
SPECIFICATION FOR FOOD ADDITIVES COLOURING
MATTER ERYTHROSINE BS

FOREWORD

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Bureau of Ceylon Standards on 1982-11-24 after the draft, finalized by the Drafting Committee on Food Additives had been approved by the Agricultural and Food Products Divisional Committee.

This is one of the series of Sri Lanka Standards for food colours.

This specification is subject to Sri Lanka Food Act No. 26 of 1980 and the regulations framed thereunder wherever applicable.

All standard values given in this specification are in SI units.

For the purpose of deciding whether a particular requirement of this specification is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with CS 102. The number of figures to be retained in the rounded off value shall be the same as that of the specified value in this specification.

The assistance gained from the publications of the Food and Agricultural Organization (FAO), the British Standards Institution and the Indian Standards Institution in the preparation of this specification is gratefully acknowledged.

1 SCOPE

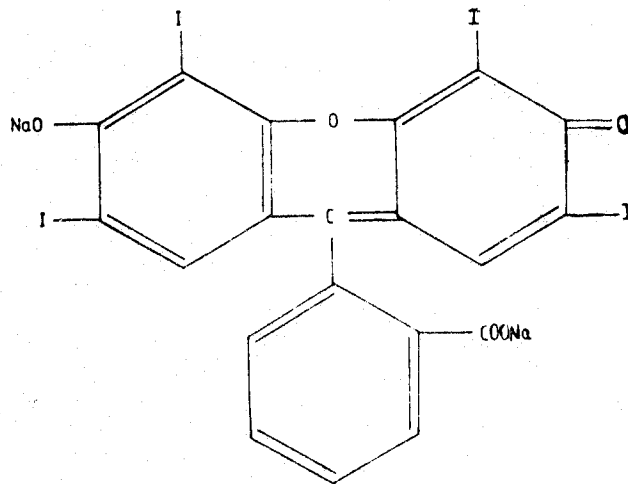
This specification prescribes the requirements, methods of sampling and test for Erythrosine BS for use in the colouring of food stuffs.

2 REFERENCES

- CS 102 Presentation of numerical values
SLS 394 Analysis of water soluble coal-tar dyes permitted for use in foods
SLS 467 Labelling of prepackaged foods
Part 1 General guidelines
Part 2 Guidelines on claims
SLS 543 Methods of sampling for food colours.

3 DESCRIPTION

- 3.1 Common name : Erythrosine BS.
3.2 Synonyms : C.I. Food Red 14, FD and C Red No. 3.
3.3 Colour index number and EEC number : 45430 and E 127.
3.4 Class : Xanthene.
3.5 Chemical name : Disodium or dipotassium salt of 2:4:5:7 - tetraiodofluorescein.
3.6 Empirical formula : $C_{20}H_6O_5I_4Na_2$.
3.7 Molecular mass : 879.87 (disodium salt).
3.8 Structural formula



4 REQUIREMENTS

4.1 Composition

The colouring matter shall consist essentially of disodium or dipotassium salt of 2:4:5:7 - tetraiodofluorescein and shall not contain

any extraneous matter injurious to health.

4.2 The colouring matter shall also conform to the limits specified in Table 1 and not exceed the limits for heavy metals and inorganic iodide given in Table 2.

TABLE 1 - Limits for erythrosine BS

Sl. No. (1)	Characteristic (2)	Limit (3)	Method of test ref. to	
			Appendix in the standard (4)	Clause No. in SLS 394:1976 (5)
i	Total dye content, corrected for sample dried at 105 ± 1 °C. for 2 h, per cent by mass, min	85	A	-
ii	Matter volatile at 135 °C, per cent by mass, max.	12	-	2.1
iii	Matter insoluble in water, per cent by mass, max.	0.2	-	2.2
iv	Chlorides and sulphates, per cent by mass, max.	2	-	2.5 and 2.6
v	Heavy metals as sulphides	Colour of ref. standard	-	2.9

TABLE 2 - Tolerance limits

Sl. No. (1)	Trace element (2)	Tolerance limit mg/kg (3)	Method of test ref. to (4)
i	Copper (as Cu)	10	2.8 of SLS 394:1976
ii	Arsenic (as As)	1	
iii	Lead (as Pb)	10	
iv	Inorganic iodide	1000	Appendix B

5 PACKAGING

Erythrosine BS shall be packed in suitable containers which shall in no way affect the nature and composition of the material within.

The containers shall be strong enough to withstand damage in handling.

6 MARKING AND LABELLING

6.1 The following particulars shall be marked legibly and indelibly on the label of the container.

- a) The words *Erythrosine BS*;
- b) Colour index number - No. 45430;
- c) Registered trade mark (if any);
- d) Name and address of manufacturer;
- e) Net mass in grams; and
- f) Batch or code number.

6.2 The marking and labelling shall be done in accordance with SLS 467.

6.3 The containers may also be marked with the Certification Mark of the Bureau of Ceylon Standards illustrated below on permission being granted for such marking by the Bureau of Ceylon Standards.



NOTE - The use of the Bureau of Ceylon Standards Certification Mark (SLS Mark) is governed by the provisions of the Bureau of Ceylon Standards Act and the regulations framed thereunder. The SLS Mark on products covered by a Sri Lanka Standard is an assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control, which is devised and supervised by the Bureau and operated by the producer. SLS marked products are also continuously checked by the Bureau for conformity to that standard as a further safeguard. Details of conditions under which a permit for the use of the Certification Mark may be granted to manufacturers or processors may be obtained from the Bureau of Ceylon Standards.

7 SAMPLING

7.1 The methods of drawing representative samples shall be as specified in relevant clauses of SLS 543.

7.2 Tests for requirements specified in this specification shall be carried out on the composite sample obtained as in 7.1.

8 METHODS OF TEST

Tests shall be carried out in accordance with SLS 394, Appendix A and Appendix B.

9 CONFORMITY TO STANDARD

The lot shall be declared as conforming to the requirements of this specification, if the test results on the composite sample satisfy the relevant requirements.

APPENDIX A

DETERMINATION OF TOTAL DYE CONTENT

A.1 NITRIC ACID METHOD

A.1.1 Reagents

A.1.1.1 *Nitric acid*, 1.5 N and 0.5 per cent.

A.1.1.2 *Silver nitrate*, 4.25 per cent (mass/volume) solution of silver nitrate (AgNO_3) in water (0.25 N).

A.1.2 Procedure

Dissolve 1.000 g of erythrosine in 250 ml of water, transfer to a clean 500-ml beaker, add 8.0 ml of 1.5 N nitric acid and stir well. Filter through a sintered glass crucible (porosity 3, diameter 50 mm) which has been weighed containing a small glass stirring rod. Wash thoroughly with 0.5 per cent nitric acid until the filtrate gives no turbidity with silver nitrate and then wash with 30 ml water. Dry to constant mass at 135 ± 5 °C, carefully breaking up the precipitate by means of the glass rod. Cool in a desiccator and weigh.

A.1.3 Calculation

$$\text{Total dye content, per cent} = \frac{\text{Mass of residue} \times 105.3}{\text{Mass of the sample}}$$

APPENDIX B

DETERMINATION OF INORGANIC IODIDE

B.1 REAGENTS

B.1.1 *Silver nitrate*, 0.1 N standard solution.

B.1.2 *Nitric acid*, 1.5 N solution.

B.2 APPARATUS

B.2.1 Potentiometric titration apparatus, with silver indicator electrode, calomel reference electrode and saturated potassium sulphate bridge.

B.3 PROCEDURE

B.3.1 Weigh about 3 g of the dry sample into a 500-ml beaker. Dissolve in 300 ml of water and add 200 ml of the nitric acid. Filter through a Grade 3 sintered glass filter of diameter preferably 62.5 mm, but not less than 37.5 mm and wash with 2.50-ml portions of water.

B.3.1.1 Place the silver electrode in the combined filtrate and washings and connect the calomel electrode to this solution by means of the saturated potassium sulphate bridge. Titrate the solution with 0.1 N silver nitrate solution to the zero mV, the iodide end point; 1 ml of 0.1 N silver nitrate solution = 0.0150 g sodium iodide.

B.4 CALCULATION

B.4.1 Iodide as sodium iodide, mg/kg = $\frac{A \times 1.50}{m} \times 10^4$

where

A = volume, in millilitre, of 0.1 N silver nitrate solution required for the iodide end point; and

m = mass, in grams, of dye sample taken.

SLS CERTIFICATION MARK

The Sri Lanka Standards Institution is the owner of the registered certification mark shown below. Beneath the mark, the number of the Sri Lanka Standard relevant to the product is indicated. This mark may be used only by those who have obtained permits under the SLS certification marks scheme. The presence of this mark on or in relation to a product conveys the assurance that they have been produced to comply with the requirements of the relevant Sri Lanka Standard under a well designed system of quality control inspection and testing operated by the manufacturer and supervised by the SLSI which includes surveillance inspection of the factory, testing of both factory and market samples.

Further particulars of the terms and conditions of the permit may be obtained from the Sri Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.



SRI LANKA STANDARDS INSTITUTION

The Sri Lanka Standards Institution (SLSI) is the National Standards Organization of Sri Lanka established under the Sri Lanka Standards Institution Act No. 6 of 1984 which repealed and replaced the Bureau of Ceylon Standards Act No. 38 of 1964. The Institution functions under the Ministry of Science & Technology.

The principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote standardization and quality control by educational, consultancy and research activity.

The Institution is financed by Government grants, and by the income from the sale of its publications and other services offered for Industry and Business Sector. Financial and administrative control is vested in a Council appointed in accordance with the provisions of the Act.

The development and formulation of National Standards is carried out by Technical Experts and representatives of other interest groups, assisted by the permanent officers of the Institution. These Technical Committees are appointed under the purview of the Sectoral Committees which in turn are appointed by the Council. The Sectoral Committees give the final Technical approval for the Draft National Standards prior to the approval by the Council of the SLSI.

All members of the Technical and Sectoral Committees render their services in an honorary capacity. In this process the Institution endeavours to ensure adequate representation of all view points.

In the International field the Institution represents Sri Lanka in the International Organization for Standardization (ISO), and participates in such fields of standardization as are of special interest to Sri Lanka.