

SRI LANKA STANDARD 326 : 2015
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SPECIFICATION FOR
CHOCOLATE
(Second Revision)

SRI LANKA STANDARDS INSTITUTION

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SLS 326 : 2015

Gr. 7

(Attached AMD 550)

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SRI LANKA.**

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Sri Lanka Standard
SPECIFICATION FOR CHOCOLATE
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FOREWORD

This Sri Lanka Standard was approved by the Sectoral Committee on Food Products and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2015-10-08.

This standard was first published in 1974 and revised in 1985. To align with the current International Standards a revision of this standard was considered necessary. With technological advances in this industry, new varieties of chocolate are being manufactured and therefore this standard is being revised to incorporate these varieties which include filled, composite and white chocolates.

The organoleptic evaluation of the quality of chocolates is based essentially on its smoothness, taste and flavour. To give a smooth mouth feeling effect, a high cocoa butter content and disintegration of cocoa matter and sugars to a very fine size are essential so that the full flavour of the chocolate becomes apparent. Products not defined in this standard and where the organoleptic properties are derived from non- fat cocoa solids come under the standard “Cocoa based confectionery”, SLS 1509, in their designations in accordance with custom. This is to designate other products which should not be confused with those defined in this standard.

The need was felt to identify a test method for the determination of cocoa solids. However, in view of the non- availability of a suitable test method, it was decided that it may be included at a later stage. Till such time, manufacturers are required to maintain a record showing the quantity of the cocoa solids added during the manufacture.

This standard is subject to the Food Act No. 26 of 1980 and the regulations framed thereunder, wherever applicable.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the results of a test or an analysis, shall be rounded off in accordance with **SLS 102**. The number of significant places to be retained in the rounded off value shall be the same as that of the specified value in this standard.

While revising of this standard, the assistance derived from the Codex standard for Chocolate and Chocolate products (CODEX STAN 87-2003) is gratefully acknowledged.

1 SCOPE

1.1 This standard prescribes the requirements, methods of sampling and testing for chocolate.

1.2 This standard does not cover the use of the term “chocolate” in bakery products, dairy products, cereal products, deserts, confectionery and beverages.

2 REFERENCES

Official Methods of Analysis of the Association of official Analytical Chemists (AOAC), 18th Edition, 2nd Revision 2007.

SLS	79	Food grade salt
SLS	102	Presentation of numerical values
SLS	106	Cocoa beans
SLS	143	Code of practice for general principles of food hygiene
SLS	191	White sugar
SLS	299	Cocoa butter
SLS	428	Random sampling methods
SLS	516	Microbiological test methods Part 2 Enumeration of yeasts and moulds Part 5 Detection of <i>Salmonella</i> spp.
SLS	883	Brown sugar
SLS	1510	Methods of test for determination of cocoa butter equivalents in milk chocolate Part 1 Milk chocolate Part 2 Cocoa butter and plain chocolate Section 1 Determination of presence of cocoa butter equivalents Section 2 Quantification of cocoa butter equivalents

3 DEFINITIONS

For the purpose of this standard, the following definitions shall apply:

3.1 chocolate : A homogeneous product obtained by an appropriate manufacturing process from one or more blends of ground cocoa, or cocoa paste or cocoa mass, or cocoa powder including low-fat cocoa powder, and cocoa butter, which may be combined with milk products, sugar and /or sweeteners and other ingredients specified in this standard.

3.2 cocoa butter equivalents : The general term for fats used to replace cocoa butter in chocolate. They resemble the chemical composition and physical properties of cocoa butter very closely, making them therefore extremely difficult to quantify and even in some cases to detect. In principle, cocoa butter equivalents must by definition be fats low in lauric acid, rich in symmetrical mono-unsaturated triacylglycerols of the type 1,3-dipalmitoyl-2-oleoylglycerol, 1-palmitoyl-2-oleoyl-3-stearoylglycerol and 1,3-diestearoyl-2-oleoylglycerol, miscible with cocoa butter, and obtained only by refining and fractionation.

3.3 milk solids : The addition of milk ingredients in their natural proportions, except that milk fat may be added or removed.

4 TYPES

Chocolate shall be of the following types (see Table 1):

4.1 Dark chocolate / Bitter sweet chocolate/ Semi-sweet chocolate: Chocolate to which sugar has been added and with a distinctive bitter-sweet taste.

- 4.2 Sweet chocolate/ Plain chocolate:** Chocolate to which sugar has been added and with a sweet taste.
- 4.3 Milk chocolate:** Chocolate to which sugar and milk solids has been added.
- 4.4 Dairy milk chocolate / Family milk chocolate:** Chocolate to which sugar and high proportion of milk solids has been added.
- 4.5 Couverture chocolate:** Chocolate to which sugar has been added and suitable for coating purposes.
- 4.6 Couverture milk chocolate:** Chocolate to which sugar and milk solids has been added and suitable for coating purposes.
- 4.7 White chocolate:** A homogeneous product made from a blend of cocoa butter, milk or milk products and sugar.
- 4.8 Filled chocolate:** A product covered by a coating of one of the types of chocolate given in 4.1 to 4.7, the center of which is clearly distinct, through its composition, from the external /outer coating. This does not apply to products the inside of which consists of bakery products, pastry, biscuit or edible ice including ice cream products. The chocolate part of the coating must make up at least 25 per cent of the total mass of the product.
- 4.9 Chocolate with nuts*:** A chocolate product to which the provisions of 4.1 to 4.8 apply and one or more varieties of nuts added either whole or in pieces or ground.
- 4.10 Praline chocolate:** A product in a single mouthful size, consisting of filled chocolate or a single chocolate or a combination or a mixture of chocolate as given in 4.1 to 4.7 and other edible food stuffs, provided that chocolate constitutes not less than 25 per cent of the total mass of the product.
- 4.11 Composite chocolate*:** Chocolate to which the provision of 4.1 to 4.7 apply, with the addition of one or more edible food stuffs, with the exception of flour, starch and fat.
- 4.12 Cooking chocolate:** Chocolate to which the provisions of 4.1 or 4.2 or 4.7 apply, prepared for cooking.
- 4.13 Cooking milk chocolate:** Chocolate to which the provision of 4.3 apply, prepared for cooking.

NOTE

In case of Chocolate with nuts and Composite chocolate, the added edible food stuffs such as fruits, nuts, etc. should not be less than 15 per cent and not more than 40 per cent of the total mass of the product.

5 INGREDIENTS

All ingredients used shall comply with the Food Act No. 26 of 1980 and the regulations framed thereunder.

5.1 Basic ingredients

5.1.1 *Cocoa material*

Cocoa nibs from cocoa beans, conforming to **SLS 106**, Cocoa liquor, Cocoa mass, Cocoa powder including low fat Cocoa powder, Cocoa solids (except for white chocolate)

5.1.2 *Cocoa butter*, conforming to **SLS 299**

Vegetable fats other than cocoa butter may be added and these vegetable fats shall be cocoa butter equivalents (see **6.2.4** and **Annex I**)

5.1.3. *Sugars and/or permitted sweeteners*

White sugar, conforming to **SLS 191**

Brown sugar, conforming to **SLS 883**

5.1.4 *Milk solids* –only for milk chocolate, dairy/family milk chocolate, white chocolate, couverture milk chocolate, cooking milk chocolate

5.2 Optional ingredients

In addition to the ingredients given in **5.1**, the product may contain one or more of the substances given below:

5.2.1 *Barley malt extract*

5.2.2 *Flavouring substances*

Natural or Nature identical

Vanillin

Ethyl Vanillin

5.2.3 *Emulsifying substances*

Lecithins (INS 322) -Limited by GMP

Ammonium salts of phosphatidic acids (INS 442)- 10 g/kg (max.)

Mono and diglycerides of fatty acids (INS 471)- Limited by GMP

Polyglycerol esters interesterified ricinoleic acid (INS 476) - 5 g/kg(max.)

5.2.4 *Food grade Salt*, conforming to **SLS 79**

5.2.5 *Any other edible food stuff*, suitable for products given in **4.8** to **4.11**

6 REQUIREMENTS

All types of chocolate given in Clause 4 shall conform to the following requirements.

6.1 General requirements

6.1.1 The product shall be manufactured, packaged, stored, transported and distributed in accordance with the conditions prescribed in **SLS 143**.

6.1.2 The product shall be homogeneous and have a colour, taste and flavour characteristic to the type of chocolate.

6.1.3 The product shall be free from rancidity or other off odour, insect infestation and fungal growth, filth, added colouring substances (except in the case of filled chocolate, sugar coated) and any other foreign substances.

6.1.4 The product shall be free from animal fats or their derivatives (with the exception of milk fat).

6.2 Compositional and chemical requirements

6.2.1 The product shall conform to the compositional requirements given in Table 1, when tested according to the methods given in Columns 13 of the table.

6.2.2 The moisture content of the product shall not be more than 3 per cent by mass, when tested according to the method given in **AOAC 931.04**.

6.2.3 The total ash shall not be more than 2.5 per cent by mass (on moisture and fat free basis), when tested according to the method given in **AOAC 972.15**.

6.2.4 The vegetable fats other than cocoa butter as given in Annex I may be added and such addition shall not exceed 5 per cent of the finished product, after deduction of the total weight of any other edible food stuff used, without reducing the minimum content of cocoa butter or total dry cocoa solids.

The determination of cocoa butter equivalents shall be carried out in accordance with the methods given in **SLS 1510 Part 1, Part 2 / Section 1 and Section 2**.

NOTE

It is not necessary to carry out the determination of cocoa butter equivalents as a routine for all the samples. This should be tested in case of dispute or when requested.

6.3 Microbiological limits

The product shall conform to the microbiological limits given in Table 2, when tested according to the methods given in Column 4 of the Table.

Table 2 – Microbiological limits

SI No. (1)	Organism (2)	Limit (3)	Method of test (4)
i)	Yeasts, per g (max.)	1.0x 10 ²	Appendix B
ii)	Moulds, per g (max.)	1.0x 10 ²	
iii)	<i>Salmonella</i> , per 25 g	Absent	

6.4 Heavy metals

The product shall not exceed the limits for heavy metals given in Table 3, when tested according to the methods given in column 4 of the Table.

Table 3 – Limits for heavy metals

SI No. (1)	Heavy metal (2)	Limit (3)	Method of test (4)
i)	Arsenic, as As, mg/kg (max.)	0.5	AOAC 986.15
ii)	Lead, as Pb, mg/kg (max.)	1.0	AOAC 999.11
iii)	Cadmium, as Cd, mg/kg (max.)	0.1	AOAC 999.11

**Table 1 –Compositional requirements
(per cent by mass calculated on dry basis of the product)**

(1)	Characteristic (2)	Requirements for										Method of test (13)
		(3) Dark chocolate/Bitter sweet chocolate/ semi-sweet chocolate	(4) Sweet / Plain chocolate	(5) Milk chocolate	(6) Dairy milk / Family milk chocolate	(7) Couverture chocolate	(8) Couverture milk chocolate	(9) White chocolate	(10) Chocolate with nuts / Composite chocolate	(11) Cooking chocolate	(12) Cooking milk chocolate	
i)	Cocoa butter (min.)	18	18	**	**	31	**	20	**	18	**	AOAC 963.15
ii)	Fat free cocoa solids (min.)	14	12	2.5	2.5	2.5	2.5	**	8	12	2.5	AOAC 931.05
iii)	Total cocoa solids (min.)	35	30	25	20	35	25	**	32	30	20	See Note
iv)	Milk fat (min.)	**	**	2.5	5	**	3.5	2.5	**	**	5	AOAC 945.34, 925. 41B, 920.80
v)	Milk solids (min.)	**	**	12	20	**	14	14	**	**	20	AOAC 939.02
vi)	Total fat (min.)	**	**	25	25	**	31	**	**	**	25	AOAC 963.15
vii)	Sugar (max.)	**	60	60	60	**	60	60	**	60	60	AOAC 920.82

** Not Specified

NOTE

Total cocoa solids content shall be calculated from records maintained by the manufacturer (see Foreword).

7 PACKAGING

7.1 Chocolates shall be packaged in clean, sound, odour-free and food grade containers/packages made of tin-plate, grease-proof paper, aluminium foil or other suitable food grade flexible or rigid packaging materials.

7.2 In case of moulded chocolate bars, each unit of chocolate shall be wrapped in suitable food grade flexible packaging materials.

Such units may be overwrapped. These units, in turn, shall be collectively packaged in clean and odour-free cartons.

8 MARKING AND/OR LABELLING

8.1 The following shall be marked or labelled legibly and indelibly on each package/container :

- a) Name of the product as “chocolate” including the type;
- b) Brand name or trade mark, if any;
- c) Name and address of the manufacturer and packer/distributor in Sri Lanka;
- d) Net mass, in g or kg;
- e) Batch number or code number or a decipherable code marking;
- f) Complete list of ingredients, in descending order of their proportions;
- g) Date of manufacture;
- h) Date of expiry;
- j) Instructions for storage ; if any
- k) Country of origin, in case of imported products;
- m) When sugars are fully or partly replaced by sweeteners, an appropriate declaration shall be included;
- n) In the case of filled chocolate and praline(filled) chocolate, the nature of the filling and the type of chocolate used in the external coating shall be stated ;
- p) In the case of Assorted chocolates, the product name may be replaced by the words “Assorted chocolates” and there shall be a single list of ingredients for all the products in the assortment or alternatively list of ingredients for each type of product;
- q) Declaration of,
 - Minimum cocoa solids content, except for white chocolate
 - Milk solids content for milk chocolate, white chocolate, dairy/family milk chocolate, couverture milk chocolate and cooking milk chocolate;
- s) The products which contain vegetable fats other than cocoa butter in accordance with the provisions given in **6.2.4**, shall be indicated on the label as “contains vegetable fats in addition to cocoa butter”. This statement shall be in the same field of vision as the list of ingredients, clearly separated from that list; and
- t) When small piece of chocolate, coated with a thin layer of coloured sugar mixture, the type of chocolate used in the center shall be declared.

8.2 The marking and labelling shall also be in accordance with **SLS 467**.

9 SAMPLING

Representative samples of the product for ascertaining conformity to the requirements of this standard shall be drawn as prescribed in Appendix A.

10 METHODS OF TEST

Tests shall be carried out as prescribed in Appendix B of this standard, **SLS 1510 Part 1, Part 2/ Section 1, Section 2** and Official Methods of Analysis of the Association of official Analytical Chemists (AOAC), 18th Edition, 2nd Revision 2007.

11 CRITERIA FOR CONFORMITY

11.1 Each unit examined as in **A.4.1** satisfies the packaging, marking and/or labelling requirements.

11.2 Each unit examined as in **A.4.2** satisfies the microbiological requirements given in **6.3**.

11.3 The composite sample tested as in **A.4.3** satisfy the requirements given in **6.1.2, 6.1.3, 6.2.1, 6.2.2, 6.2.3** and **6.4**.

APPENDIX A SAMPLING

A.1 LOT

In any consignment, all the cartons or containers of the same size, type and belonging to one batch of manufacture shall constitute a lot.

A.2 GENERAL REQUIREMENTS OF SAMPLING

In drawing, preparing, sorting and handling samples, following precautions and directions shall be taken:

A.2.1 Samples shall be drawn in a protected place not exposed to damp air, dust or soot.

A.2.2 The sampling instruments shall be clean and dry when used. When drawing samples for microbiological examination, the sampling instruments shall be sterilized.

A.2.3 Samples shall be protected against adventitious contamination.

A.2.4 The samples shall be placed in clean and dry containers. The size of the sample containers shall be of such that they are almost completely filled by the sample. When drawing samples for microbiological examinations, the sample containers shall be sterilized.

A.2.5 The sample containers shall be sealed air-tight after filling and marked with the necessary details of sampling.

A.2.6 Sample shall be stored in such a manner that the temperature of the material does not vary unduly from the specified temperature.

A.3 SCALE OF SAMPLING

A.3.1 Samples shall be tested from each lot for ascertaining conformity of the product to the requirements of this Standard.

A.3.2 The number of cartons or containers to be selected from the lot shall be in accordance with Table 4.

TABLE 4 – Scale of sampling

Number of cartons or containers in the lot (1)	Number of cartons or containers to be selected (2)
Up to 150	8
151 to 280	10
281 to 500	13
501 to 1 200	16
1 201 and above	18

A.3.3 If the cartons are packed in master cartons, 10 per cent of the master cartons subject to a minimum of two master cartons shall be selected, and as far as possible an equal number of cartons shall be drawn from each master carton so selected to form a sample as given in the table.

A.3.4 The number of units to be drawn from each carton or container shall depend on the number of units in that carton. These units shall be drawn at random at the rate of one unit per each 10 units.

A.3.5 The master cartons or containers shall be selected at random. In order to ensure randomness of selection table of random number as in **SLS 428** shall be used.

A.4 NUMBER OF TEST

A.4.1 Each unit selected as in **A.3.4** shall be examined for packaging and marking and /or labelling requirements. In the case of filled, composite, assorted chocolates only the container shall be examined for marking and /or labelling requirements.

A.4.2 Five units shall be drawn from units selected as in **A.3.4** and each unit so selected shall be examined individually for microbiological requirements given in **6.3**.

A.4.3 The remaining units of the sample shall be mixed to form a composite sample and the composite sample thus obtained shall be tested for requirements given in **6.1.2**, **6.1.3**, **6.2.1**, **6.2.2**, **6.2.3** and **6.4**.

A.5 PERPARATION OF SAMPLE

Cool the material unit hard and then grate or shear to a fine granular condition. Mix thoroughly and transfer to a well stoppered glass bottle.

APPENDIX B MICROBIOLOGICAL EXAMINATION

B.1 ENUMERATION OF YEAST AND MOULD COUNT

Enumeration of yeast and mould count shall be carried out according to the method given in **SLS 516 Part 2 /Section 2.**

B.2 DETECTION OF *Salmonella*

B.2.1 *Media and solutions*

B.2.1.1 Brilliant green solution, 1 per cent

Brilliant green dye	1 g
Distilled water	100 ml

Dissolve brilliant green in sterile distilled water.

B.2.1.2 Reconstituted non-fat dry milk

Non-fat dry milk	100 g
Distilled water	1000 ml

Suspend non-fat dry milk in distilled water and dissolve by swirling.
Sterilize at $121\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ for 15 minutes.

B.2.3 *Pre-enrichment*

Aseptically weigh 25 g of sample into a sterile blender jar. Add 225 ml of reconstituted non-fat dry milk (**B.2.1.2**) and blend for 2 minutes. Decant blended homogenate into a sterile 500-ml screw cap container. Determine the pH with a test paper. Adjust if necessary to 6.8 ± 0.2 . Add 0.45 ml of brilliant green solution (**B.2.1.1**) and mix well. Loosen cap and incubate at $37\text{ }^{\circ}\text{C}$ for 18 to 24 hours.

B.2.4 Proceed according to the method given in **SLS 516 Part 5.**

ANNEX I
Vegetable fats
(Informative)

The following vegetable fats (referred in **6.2.4**), obtained from the plants given below may be used singly or in blends:

- Illepe, Borneo tallow or Tengawang (*Shorea* spp.)
 - Palm oil (*Elaeis guineensis*, *Elaeis olifera*)
 - Sal (*Shorea robusta*)
 - Shea (*Butyrospermum parkii*)
 - Kokum gurgi (*Garcinia indica*) and
 - Mango kernel (*Mangifera indica*)
-

**AMENDMENT NO: 01 TO SLS 326:2015
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EXPLANATORY NOTE

It is decided to include “sorbitan tristearate (INS 492)” as emulsifier which is permitted by Codex General Standard for Food Additives (GSFA).

AMD 550

Amendment No: 01 approved on 2021-04-30 to SLS 326: 2015

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5.2 Optional ingredients

5.2.3 *Emulsifying substances*

Sorbitan tristearate (INS 492) maximum 10,000 mg/ kg

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 •

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