SRI LANKA STANDARD 824:Part 1:2017

UDC: 637.146.3

SPECIFICATION FOR

FERMENTED MILK PRODUCTS

PART 1: CURD

(First Revision)

SRI LANKA STANDARDS INSTITUTION

Sri Lanka Standard
SPECIFICATION FOR FERMENTED MILK PRODUCTS
PART 1: CURD
(First Revision)

SLS 824:Part 1:2017

Gr. 6

Copyright Reserved

SRI LANKA STANDARDS INSTITUTION
No, 17 , Victoria Place
Elvitigala Mawatha,
Colombo 08.
Sri Lanka.

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.

© **SLSI 2017**

All right reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the SLSI.

SRI LANKA STANDARD
SPECIFICATION FOR FERMENTED MILK PRODUCTS
PART 1: CURD
(First Revision)

FOREWORD

This 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 2017-05-04.

This Standard consists of two parts as follows:
Part 1 : Curd
Part 2 : Yoghurt

This Standard was first published in 1988. In this revision, microbiological requirements have been updated by introducing three class plan and limits for *Salmonella*, *Staphylococcus aureus* and *Listeria monocytogens*. Also the references to the latest methods of test have been given.

This Standard is subject to the restrictions imposed under the Sri Lanka Food Act No.26 of 1980 and the regulations framed thereunder.

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

In the preparation of this Standard the assistance obtained from the publications of the Bureau of Indian Standards and Codex Alimentarius Commission is gratefully acknowledged.

1 SCOPE

This Part of Standard prescribes the requirements and methods of sampling and test for curd.

2 REFERENCES

SLS	**102**	Rules for rounding off numerical values
SLS	**143**	Code of practice for general principles of food hygiene
SLS	**181**	Raw and processed milk
SLS	**393**	Code of practice for preparation of test samples, initial suspension and decimal dilutions for microbiological examination of food and animal feeding stuffs Part 5: Specific rules for the preparation of milk and milk products
SLS	**428**	Random sampling methods.
SLS	**467**	Labeling of prepackaged foods.

SLS	**516**	Method of test for microbiology of food and animal feeding stuffs Part 3 : Horizontal method for the detection and enumeration of coliforms Section 1: Most Probable Number Part 5 : Horizontal method for the detection of *Salmonella spp*. Part 6 : Horizontal method for the enumeration of coagulase positive *Staphylococcus aureus* and other species Section 1 Technique using Baired Packer Agar medium Part 12: Horizontal method for the detection and enumeration of presumptive *Escherichia coli* (Most Probable Number Method) Part 15 : Microbiology of food and animal feeding stuffs -- Horizontal method for the detection and enumeration of *Listeria monocytogenes*
SLS	**614**	Potable water
SLS	**735**	Methods of test for milk and milk products Part 1: Determination of fat Part 17: Determination of the benzonic and sorbic acid content
SLS	**872**	Code of hygienic practice for dairy industries
SLS	**1463**	General requirements and guidance for microbiological examinations of food and animal feeing stuffs
SLS	**1558**	Methods of test for microbiology of milk and milk products Part 1 : Enumeration of colony- forming units of yeasts and/ or moulds -- Colony – count technique at 25 oC

2 DEFINITIONS

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

3.1 fermented milk products: Milk product obtained by fermentation of milk, which milk may have been manufactured from products obtained from milk with or without compositional modification as limited by the provision in Section **5.3** , by the action of suitable microorganisms and resulting in reduction of pH with or without coagulation (iso-electric precipitation). These starter microorganisms shall be viable, active and abundant in the product to the date of minimum durability. If the product is heat treated after fermentation the requirement for viable microorganisms does not apply.

3.2 curd: Fermented milk product obtained from coagulation of buffalo milk or cow milk or mixture of buffalo and cow milk by a harmless lactic acid producing bacterial culture. Curd shall not contain any admixture, or additives or any extraneous matter other than sorbic acid as preservative.

4 INGREDIENTS

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

4.1 Milk, confirm to **SLS 181.** One of the following types shall be used:
- Buffalo milk
- Cow milk
- Mixture of buffalo milk and cow milk

4..2 Culture, harmless lactic acid producing bacterial cultures

5 REQUIREMENTS

5.1 Hygienic requirements

Curd shall be processed, packaged stored and distributed under hygienic conditions as specified in **SLS 143** and **SLS 872.**

5.2 General requirements

5.2.1 Curd shall have a pleasant odour and characteristic flavour.

5.2.2 Curd shall be clean, free from dirt and extraneous matter.

5.2.3 Curd shall be firm solid and free of lumps. It shall be of uniform consistency with negligible whey separation.

5.2.4 Curd shall not contain more than 300 mg/kg of sorbic acid when determined according to the **SLS 735 : Part 17**, if used. No preservatives shall be added other than sorbic acid.

5.3 Compositional requirements

Curd shall also comply with the requirements specified in Table **1** when tested according to the methods prescribed in Column **5** of the table.

TABLE 1 - Requirements for curd

SI No. (1)	**Characteristic** (2)	**Buffalo Curd** (3)	**Cow Curd /Curd** (4)	**Method of test** (5)
i)	Milk fat, per cent by mass, min	7.0	5.0	**SLS 735 :** Part **1**
ii)	Milk solid non fat per cent by mass, min.	8.5	8.5	Appendix **C**
iii)	pH, max.	4.5	4.5	Appendix **D**

5.4 Microbiological requirements

Curd shall conform to the microbiological limits given in Table **2**, when tested according to the methods prescribed in Column **7** of the table.

TABLE 2 - Microbiological limits

SI NO (1)	**Organism** (2)	**n** (3)	**c** (4)	**m** (5)	**M** (6)	**Method of test** (7)
i)	Coliforms, MPN per g	5	2	10	1 X 10^2	**SLS 516 :** Part **3/** Section **1**
iii)	*Escherichia coli*, MPN per g	5	0	Absent	-	**SLS 516 :** Part **12**
ii)	*Staphylococcus aureus* (coagulase positive), per g	5	2	10	1 X 10^2	**SLS 516 :** Part **6/** Section **1**
iv)	*Salmonella*, per 25 g	5	0	Absent	-	**SLS 516 :** Part **5**
v)	*Listeria monocytogenes*, per 25 g	5	0	Absent-	-	**SLS 516 :** Part **16**
vi)	Yeast count, per g	5	3	50	1 X 10^2	**SLS 1558** : Part **1**
vii)	Mould count, per g	5	0	Less than 1X10	-	**SLS 1558** : Part **1**

where,
n is the number of samples to be tested;
c is the maximum allowable number of samples yielding values between m and M;
m is the limit below which a count is acceptable for any sample; and
M is the limit above which a count is unacceptable for any sample.

6 PACKAGING

6.1 Curd shall be packaged in clean and dry clay pots or food grade plastic containers suitable for food use and covered with a food grade plastic lid/ aluminum foil or food grade material.

6.2 The packaging material which comes into contact directly with the product shall be sufficiently inert to preclude substances from being transferred to food in quantities large enough to endanger human health or to bring about an unacceptable change in the composition of the product or deterioration in its organoleptic properties.

7 MARKING AND/ OR LABELLING

7.1 The following shall be marked or labelled legibly and indelibly on each container destined for the final consumer.

a) Name of the product as “curd” or “buffalo curd” or “cow curd”;
b) Brand name or trade name, if any;
c) Net mass in ‘g’ or ‘kg’; “ml” or “l”;
d) Declaration of preservative; if any
e) The name and address of the manufacturer;
f) List of ingredients, in descending order of their proportion;
g) Batch or code number or a decipherable code marking;
h) Date of manufacture;
j) Date of expiry;
k) Country of origin, in case of imported products; and
m) Storage conditions.

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

8 SAMPLING

Representative samples of curd shall be drawn according to the method prescribed in Appendix **A.**

9 METHODS OF TEST

Test shall be carried out as specified in of **Section 1/ Part 3, Part 5, Section 1/ Part 6, Part 12, Part 15** of **SLS 516, Part 1, Part 17** of **SLS 735** and **Appendices C** and **D** of this Standard.

10 CONFORMITY TO STANDARD

A lot shall be declared as confirming to the requirement of this Specification if all the test results satisfy the relevant requirements.

10.1 Each container inspected as in **A.4.1** satisfies packaging and marking and/or labeling requirements.

10.2 Each sample tested as in **A.4.2** satisfies the microbiological requirements given in clause **5.4**.

10.3 Each sample tested as in **A.4.3** satisfies the relevant requirements given in clause **5.2** .

10.4 The test results of the composite sample satisfy the relevant requirements given in clause **5.3**.

APPENDIX A
SAMPLING

A.1 Lot

In any consignment all the containers of the same size and manufactured under conditions of manufacture shall constitute a lot.

A.2 General requirements of sampling

In drawing, preparing, storing and handling samples the 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 samples for microbiological analysis shall be drawn first.

A.2.3 The samples shall be protected against adventitious contamination.

A.2.4 The sampling instruments shall be clean and dry and shall not impart any foreign odour or flavor when used. When taking samples for microbiological examination the sampling instruments and containers shall be sterilized.

A.2.5 The samples shall be kept in glass or suitable containers. They shall be clean and dry when used.

A.2.6 The samples shall be stored in such a manner that there will be no deterioration of quality of the material Suitably at a temperature between 0 ^{0}C to 5 ^{0}C .

A.2.7 The samples shall be placed in containers which shall be sealed air-tight after filling and marked with necessary details of sampling.

A.3 Scale of sampling

A.3.1 The samples shall be tested from each lot for ascertaining its conformity to the requirements of this Standard.

A.3.2 The number of containers to be selected from a lot shall be in accordance with Table **3**.

TABLE 3 - Scale of sampling

No . of containers in the lot (1)	**No. of containers to be selected** **(2)**
Up to 90	10
91 to 150	11
151 to 200	12
201 and above	13

A.3.3 The containers shall be selected at random. In order to ensure randomness of selection, tables of random numbers as given in **SLS 428** shall be used.

A.4 Number of tests

A.4.1 Each container selected as in **A.3.2** shall be inspected for packaging and marking and/or labelling requirements.

A.4.2 Five sample units shall be selected from the sample units selected as in **A.3.2** and sufficient quantity of material shall be drawn from each container selected, using an appropriate sampling instrument which has been sterilized. Each sample thus obtained shall be transferred to separate sample containers as per Appendix **B** and shall be tested individually for microbiological requirements given in clause **5.4** of this Standard.

A.4.3 Each of the remaining containers shall be examined for requirements given in Clause **5.2** of this Standard.

A.4.4 Sufficient quantity of material shall be taken from each of the containers examined in **A.4.3** and placed in a container to form a composite sample. The composite sample thus obtained shall be tested for the requirements given in Clause **5.3** of this Standard**.**

APPENDIX B
MICROBIOLOGICAL EXAMINATION

Samples shall be examined within 24 hours of drawing at the laboratory and shall be held between 0 °C and 5 °C until the commencement of testing.

B.1 PREPARATION OF TEST SAMPLE

Sample shall be prepared in accordance with clause **9.8** of **SLS 393 : Part 3:2013**.

APPENDIX C
DETERMINATION OF MILK SOLIDS NON FAT

C.l INTRODUCTION

The amount of milk solids other than fat (MSNF) can be calculated approximately from individual constituents such as the protein, casein, calcium and lactose. The subtraction from the constituent when present from other sources (eg: calcium alginate, added lactose is however usually difficult to assess).

This method employs the formal titration which is one of the simplest for assessing MSNF content. It has been shown that the result obtained is not affected by the presence of wheat flour and gelatine in the product.

C.2 REAGENTS

C.2.1 *Phenolphthalein indicator solution*

C.2.2 *Sodium hydroxide*, C (NaOH) = 0.100 mol/l

C.2.3 *Formaldehyde*, 40 per cent (V/V)

C.3 PROCEDURE

C.3.1 Weigh, to the nearest milligram, about 10 g of the prepared sample into a porcelain dish. Add 1 ml of phenolphthalein **(C.2.1)** and titrate with sodium hydroxide **(C.2.2)** until a faint pink colour is obtained.

Add 3.00 ml of formaldehyde solution **(C.2.3)** to the neutralized yogurt, mix with a glass rod and titrate with the sodium hydroxide using phenolphthalein as the indicator (V_1).

C.3.2 Carry out a blank titration, by titrating 3.00 ml of formaldehyde solution **(C.2.3)** to neutrality (V_2).

C.4 CALCULATION

Milk solids, non fat, per cent by mass = $5.67 (V_1 - V_2)$

Where,

V_1 is the volume, in ml, of the sodium hydroxide solution used in **C.3.1;** and

V_2 is the volume, in ml, of the sodium hydroxide solution used in **C.3.2.**

APPENDIX D
DETERMINATION OF pH

C.1 PROCEDURE

pH shall be determined using a pH meter preferably with a glass electrode.

…….

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.*

Printed at SLSI (Printing Unit)

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 and Research.

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 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 return 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.

Printed at the Sri Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08