SRI LANKA STANDARD 34 : 2009
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SPECIFICATION FOR
TOILET SOAP
(Second Revision)

SRI LANKA STANDARDS INSTITUTION

Sri Lanka Standard
SPECIFICATION FOR TOILET SOAP
(Second Revision)

SLS 34 : 2009
(Attached AMD No.1(AMD 446))

Gr. 5

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

Sri Lanka Standard
SPECIFICATION FOR TOILET SOAP

FOREWORD

This standard was approved by the Sectoral Committee on Chemical and Polymer Technology and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2009-07-23.

This specification was first approved for publication in 1968 and revised in 1981. In this Second Revision, the lather volume has been introduced as a product requirement and ISO test methods have been incorporated.

Toilet soap used as a toiletry for cleansing the body. It may be perfumed, white or coloured and compressed into cakes or tablets. Toilet soaps with TFM not less than 76.5 per cent by mass are considered as toilet soaps.

Toilet soap may contain perfumes, colouring matter, antioxidants, chelating agents, superfatting agents and medicaments as added ingredients. These should be non injurious to the skin in use. It is necessary that the raw materials used are such that in the concentrations in which they would be present in the toilet soap, after interaction with the other raw materials used in the formulation, are free from any harmful effects. It shall be the responsibility of the manufacturer to ensure the dermatological safety of the product.

This specification is subject to the restrictions imposed under the Cosmetics, Devices and Drugs Act No.27 of 1980, Consumer Protection Act No. 01 of 1979, Consumer Affairs Authority Act No. 09 of 2003 and the Regulations framed there under.

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 **SLS 102.** The number of figures to be retained off value shall be same as that of the specified value in this specification.

In the preparation of this specification, the assistance obtained from the following publications is gratefully acknowledged :

BS 1914 : 1990 British Standard Specification for Toilet soap
IS 2888 : 2004 Indian Standard Toilet Soap Specification
MS 8.3 : 1991 Malaysian Standard Specification for Toilet Soap

1 SCOPE

1.1 This specification prescribes the requirements and methods of sampling and test for toilet soap tablets or cakes with TFM not less than 76.5 per cent by mass.

1.2 This specification does not cover carbolic soap, transparent soap, toilet soap with detergent, and non soapy detergent based products.

2 REFERENCES

ISO 456 Surface active agents – Analysis of soaps – Determination of free caustic alkali
ISO 457 Soaps – Determination of chloride content – Titrimetric method
ISO 673 Soaps – Determination of content of ethanol – insoluble matter
ISO 684 Analysis of soaps – Determination of total free alkali
ISO 685 Analysis of soaps – Determination of total alkali content and total fatty matter content
SLS 102 Rules for rounding off numerical values
SLS 428 Random sampling methods
SLS 457 Classification of cosmetic raw materials and adjuncts
Part 1 : Dyes, colours and pigments recognized as safe
Part 2 : Raw materials and adjuncts other than dyes, colours and pigments not recognized as safe
SLS 796 Shaving creams
SLS 1316 Code of good manufacturing practices for cosmetics industry

3 REQUIREMENTS

3.1 General requirements

3.1.1 Toilet soap shall be a well saponified product and homogenized. It shall be free from objectionable odour and shall not develop such odours during storage within the declared shelf life. It shall have good lathering and cleansing properties.

3.1.2 Toilet soap shall be manufactured by a process adhering to Good Manufacturing Practices (GMP) complying with **SLS 1316**.

3.1.3 Toilet soap shall meet performance and stability specifications given by the manufacturer based on in-vitro studies for the complete duration of the declared shelf life. The date of expiry / best before / shelf life of the finished product shall be determined on stability results.

3.2 Raw materials

3.2.1 The dyes, colours and pigments used, if any, shall comply with the provisions of **SLS 457 : Part 1**.

3.2.2 The raw materials and adjuncts other than dyes, colours and pigments shall comply with the provisions of **SLS 457 : Part 2**.

3.3 Other requirements

3.3.1 Toilet soap shall also comply with the requirements given in Table **1**, when tested according to the relevant methods given in Column (**4)** and the results recalculated according to **7.1** for characteristics (ii) to (vi) of the Table **1**.

TABLE 1 – Requirements for toilet soap

Sl. No.	Characteristics	Requirement	Method of test
(1)	(2)	(3)	(4)
i)	Total fatty matter, including rosin acids, per cent by mass, min.	76.5	ISO 685
ii)	Rosin acids content, per cent by mass of the total fatty matter, max.	3.0	Appendix B
iii)	Matter insoluble in ethanol, per cent by mass, max.	2.0	ISO 673
iv)	Free caustic alkali, as NaOH, per cent by mass, max.	0.06	ISO 456
v)	Total free alkali, as NaOH, per cent by mass, max.	0.3	ISO 684
vi)	Chlorides, as NaCl, per cent by mass, max.	1.0	ISO 457
vii)	Lather in ml, min.	200	Appendix D of SLS 796 : 1987

3.3.2 Mass of soap

Net mass of toilet soap indicated on the wrapper shall be complied with the recalculated mass of soap as given in **7.2**.

4 PACKAGING AND MARKING

4.1 Each cake or tablet shall be well wrapped and the wrapper shall be marked legibly and indelibly with the following:

a) Name of the product as 'Toilet Soap" ;
b) Name and address of the manufacturer including country of origin (**NOTE:** *Name and address of the manufacturer and the distributors need to be marked on imported products)* ;
c) Registered trade mark, if any ;
d) Brand name, if any ;
e) Net mass in gram at declared total fatty matter (TFM) ;
f) Batch or code or lot identification number; and
g) Date of manufacture and best before / shelf life (**NOTE :** *Date of manufacture may be used as the batch no. /lot identification no. / code no. if one batch is manufactured during the day.).*

4.2 Where more than one cake or tablet are packed into containers, each container shall be marked legibly and indelibly with the following :

a) Name of the product as 'Toilet Soap" ;
b) Name and address of the manufacturer including country of origin (**NOTE:** *Name and address of the manufacturer and the distributors need to be marked on imported products)* ;
c) Registered trade mark, if any ;
d) Number of soap tablets / cakes in each container ; and
e) Batch or code or lot identification number (**NOTE :** *Date of manufacture may be used as the batch no. /lot identification no. / code no. if one batch is manufactured during the day.).*

5 SAMPLING

Representative samples of soap for carrying out tests shall be drawn as specified in Appendix **A.**

6 METHODS OF TEST

6.1 Tests shall be carried out as prescribed in Column (**4**) Table **1**.

6.2 During the analysis, unless otherwise stated, use only reagents of recognized analytical grade and only distilled water or water of equivalent purity.

7 CALCULATION OF RESULTS

7.1 Toilet soaps are liable to lose moisture on storage. The results for different characteristics obtained by the specified methods of analysis shall therefore be recalculated in relation to the specified minimum total fatty matter by means of equation,

$$\text{Recalculated result} = \text{Actual result} \times \frac{\text{Minimum specified TFM (see Note)}}{\text{Actual TFM}}$$

NOTE : *Minimum specified total fatty matter* = 76.5 *as given in i), Column (*3**)** *of Table* **1**.

7.1.1 In each of the characteristics (ii) to (vi) of Table **1**, the requirement of the characteristic will be met if the recalculated result obtained as above is within the specified limits.

7.2 The mass of soap shall be recalculated from the equation:

$$\text{Recalculated mass of soap before drain} = \text{Actual mass of soap} \times \frac{\text{Actual TFM}}{\text{Declared TFM}}$$

NOTE : *Attention is drawn to certification marking facilities offered by Sri Lanka Standards Institution. See inside back cover of the standard*.

APPENDIX A
COMPLIANCE OF A LOT

The sampling scheme given in this Appendix shall apply where compliance of a lot to the requirements of this standard has to be assessed based on statistical sampling and inspection.

Where compliance with this standard, appropriate schemes of sampling and inspection shall be adopted based on manufacturer's control systems coupled with types, tests and testing procedures.

A.1 LOT

All cakes or tablets of the same brand and size manufactured by the same organization under relatively similar conditions of manufacture shall be grouped together to form a lot.

A.2 SCALE OF SAMPLING

A.2.1 Samples shall be tested from each lot separately for ascertaining the conformity of the soap to the requirements of this specification.

A.2.2 The number of cakes or tablets to be selected from the lot shall depend on the size of the lot and shall be in accordance with Columns (**1)** and (**2**)of Table **2**.

TABLE 2 - Scale of sampling

No. of cakes or tablets in the lot (1)	No. of cakes or tablets to be selected (2)	Acceptance no. (3)
Up to 100	4	0
101 to 500	8	0
501 to 1 000	12	1
1 001 to 5 000	16	1
5 001 and above	32	2

A.2.3 Where the soap is packed in containers, the number of containers to be selected for taking the required number of samples shall be half the number given in Column (**2)** of Table **2.** At least 2 cakes or tablets shall be drawn from each container selected to form a sample.

A.2.4 The required number of containers, cakes or tablets shall be chosen at random. A random number table specified in **SLS 428** shall be used in order to ensure randomness of selection.

A.3 NUMBER OF TESTS

A.3.1 The wrapper of each cake or tablet selected as in **A.2.2** shall be inspected for marking requirements (see **4.1**).

A.3.2 Each container selected as in **A.2.3** shall be inspected for marking requirements (see **4.2**).

A.3.3 The mass of each cake or tablet selected as in **A.2.2** shall be determined and recalculated as given in **7.2** (see **3.3.2**).

A.3.4 Each cake or tablet selected as in **A.2.2** shall be cut into halves along their longer axes. One half of each cake or tablet shall be sliced finely and mixed together to form a composite sample.

A.3.4.1 Tests for the requirements given in **3.3.1** shall be carried out on this composite sample.

A.4 CRITERIA FOR CONFORMITY

A lot shall be considered to be in conformity with the requirements of this specification if the following conditions are satisfied:

A.4.1 Each soap wrapper inspected as in **A.3.1** satisfies the marking.

A.4.2 Each container inspected as in **A.3.2** satisfies the marking.

A.4.3 The number of defective cakes or tablets is less than or equal to the corresponding acceptance number given in Column **(3)** of Table **2.**

NOTE : *A defective is a cake or tablet of which the recalculated mass determined as in* **7.2** *is less than the mass indicated on the wrapper*.

A.4.4 The composite sample tested as in **A.3.4.1** satisfies the relevant requirements.

APPENDIX B
DETERMINATION OF ROSIN

B.1 METHOD 1- QUALITATIVE TEST

B.1.1 Reagents

B.1.1.1 Acetic anhydride

B.1.1.2 Sulphuric acid, sp. Gr. 1.53

B.1.2 Procedure

Dissolve 40 g to 50 g of the soap in 400 ml of hot water in a suitable beaker and to this solution add gradually an excess of dilute sulphuric acid.

Heat the beaker and draw off the water underneath the liberated fatty acids which would have formed a clear layer on the top. Wash the fatty acids twice with 500 ml portions of boiling water. Filter the fatty acid through dry paper. Boil a few drops of the fatty acids with 2 ml to 3 ml of acetic anhydride in a dish, allow to cool and add sulphuric acid drop by drop. If rosin is present, the characteristic violet colour is produced which changes to brown.

B.2 METHOD 2 - QUANTITATIVE DETERMINATION

B.2.1 Reagents

B.2.1.1 Naphthalene- 2 sulphonic acid solution. Dissolve 40 g of naphthalene – 2 sulphonic acid in 1000 ml of pure drymethanol.

B.2.1.2 Sulphuric acid,dilute solution

B.2.1.3 Potassium hydroxide 0.2 M ethanolic solution. Standardize against standard sulphuric or hydrochloric acid solution each time the solution is used.

B.2.1.4 Phenolphthalein indicator, 0.5 per cent(m/v) solution in 95 per cent (v/v) ethanol

B.2.2 Procedure

Separate the total fatty matter from about 5 g of the soap by dissolving in hot water, acidifying with dilute sulphuric acid, cooling and washing the cake of fatty matter with water until the aqueous washings are free from acidity. The fatty matter may also be obtained by extraction with diethyl ether. Weigh about 2 g of the total fatty matter into a 150 ml flask, dissolve it in 20 ml of the naphthalene – 2 sulphonic acid solution and boil gently under a reflux condenser for 30 minutes, adding small pieces of spot to ensure regular ebullition. Carry out a blank test at the same time with 20 ml of the naphthalene 2 sulphonic acid solution alone. Cool the contents of both flasks and titrate with the potassium hydroxide solution using 0.5 ml of the phenolphthalein indicator.

B.2.3 Calculation

Rosin acids, per cent by weight of total fatty matter = $\frac{34.6\,(V - V_1)\,M}{m}$ -1

where

V is the volume of potassium hydroxide solution required by the sample, in millilitres ;
V_1 is the volume of potassium hydroxide solution required by the Blank, in millitres ;
m is the weight of total fatty matter taken, in gram ; and
M is the molarity of potassium hydroxide solution.

NOTE : *The mean molecular weight of rosin acids is taken as 346.*

Amendment No: 01 approved on 2013-10-02 to SLS 34:2009

SRI LANKA STANDARD SPECIFICATION FOR TOILET SOAP (*Second Revision*)

FOREWORD

Delete "MS 8.3 : 1991 Malaysian Standard Specification for Toilet Soap".

1 SCOPE

Delete the text given under the Scope and substitute with the following :

"

1.1 This standard prescribes the requirements and methods of sampling and test for tablets or cakes of toilet soap with or without herbs/ herbal extracts including medicated toilet soap.

1.2 This standard does not prescribe requirements related to therapeutic/ medicinal properties and claims of medicated toilet soap.

1.3 This standard does not cover carbolic soap and non soapy detergent based products."

3 REQUIREMENTS

3.3 Other requirements

TABLE 1 – Requirements for toilet soap

Sl. No. **i**), Column **4**
Delete "ISO 685" and substitute "Appendix C".

Sl. No. **vii**), Column **3**
Delete "200" and substitute "100".

Insert Appendix **C** as follows.

"APPENDIX C
DETERMINATION OF TOTAL FATTY MATTER

C.1 DEFINITION

Total fatty matter means the fatty material obtained by decomposing the soap with a strong mineral acid and extracting the separated fatty matter with diethyl ether under the operating conditions described. This term includes unsaponifiable matter, glycerides and any resinic acids contained in the soap, in addition to the fatty acids derived from the soap.

C.2 PRINCIPLE

The fatty acids are extracted with diethyl ether and titrated with a solution of sodium hydroxide in ethanol and finally weighed as soap.

C.3 REAGENTS

C.3.1 Diethyl ether (pure)

C.3.2 Ethanol, 95 per cent (V/V)

C.3.3 Sulphuric acid, 1 mol/dm^3 solution

C.3.4 Sodium chloride solution, 10 g of sodium chloride dissolved in 100 ml of distilled water

C.3.5 Sodium hydroxide, (analytical grade) 0.5 mol/dm^3 ethanolic solution (recently standardized)

C.3.6 Methyl orange indicator, 0.2 g in 100 ml of distilled water

C.3.7 Phenolphthalein indicator, 1 g in 100 ml of ethanol

C.4 PROCEDURE

Weigh, to the nearest mg, about 5 g of soap and dissolve it in about 150 ml of hot distilled water in a beaker of about 200 ml capacity. Pour this hot, aqueous solution into a separating funnel rinsing the beaker with small quantities of hot distilled water. Add a few drops of the methyl orange and then from a burette add the acid solution so that there is an excess of about 5 ml.

Add 100 ml of diethyl ether. Shake the mixture vigorously for one minute, and allow to stand until the two phases are completely separated.

Draw off the aqueous layer into a second separating funnel and re-extract with 50 ml of diethyl ether.

Draw off the aqueous layer. Combine the ether extracts in the first separating funnel. Wash with 50 ml portions of the sodium chloride solution, until the washings are neutral to methyl orange. Usually three washings are sufficient.

Transfer the ethereal solution to a tared flask, filtering if necessary. Wash the filter with small portions of the diethyl ether. Distil off nearly all the diethyl ether by boiling gently.

Dissolve the residue in 20 ml of the ethanol. Titrate the ethanolic solution of fatty acids with the ethanolic sodium hydroxide solution, using 2-3 drops of phenolphthalein as indicator. Record the volume used (see Note).

NOTE : *If the fatty acid colour masks the end point, this may be determined potentiometrically."*

Remove the ethanol by evaporation on a water-bath. Heat the flask in an oven at 120 °C until the difference in mass, after drying in the oven for an additional 15 minutes does not exceed 5 mg. Note the mass of the dry soap (m_2).

C.5 CALCULATION

Total fatty matter, per cent by mass, in the soap

$$= [m_2 - (V \times 0.5 \times 0.022)] \times \frac{100}{m_1}$$

where

m_1 is the mass in grammes of the test portion;
m_2 is the mass in grammes of dry soap; and
V is the volume in millilitres of ethanolic sodium hydroxide solution used.

Round off the result to the nearest 0.1 per cent."

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.

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