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பொதுசனக் கருத்துரைக்கான கட்டளை வரைவு

DRAFT STANDARD FOR PUBLIC COMMENT

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SRI LANKA STANDARD SPECIFICATION FOR
HAIR SHAMPOO FOR BABIES
(FIRST REVISION)

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මෙම කෙටුම්පත ශ්‍රී ලංකා ප්‍රමිතියක් ලෙස නොසැලකිය යුතු මෙන් ම භාවිතා නොකළ යුතු ද වේ.
இவ்வரைவு இலங்கைத் தரமெனக் கருதப்படவோ அன்றிப் பிரயோகிக்கப்படவோ கூடாது
This draft should not be regarded or used as a Sri Lanka Standard.

අදහස් එවිය යුත්තේ : ශ්‍රී ලංකා ප්‍රමිති ආයතනය, 17, වික්ටෝරියා පෙදෙස, ඇල්විටිගල මාවත, කොළඹ 08.

Comments to be sent to: SRI LANKA STANDARDS INSTITUTION, 17, VICTORIA PLACE, ELVITIGALA MAWATHA, COLOMBO 08.

හැඳින්වීම

මෙම ශ්‍රී ලංකා ප්‍රමිති කෙටුම්පත , ශ්‍රී ලංකා ප්‍රමිති ආයතනය විසින් සකසන ලදුව, සියලුම උද්‍යෝගී අංශ වලට තාක්ෂණික විවේචනය සඳහා යවනු ලැබේ.

අදාල අංශ භාර කමිටු මාර්ගයෙන් ආයතනයේ මහා මණ්ඩල වෙත ඉදිරිපත් කිරීමට පෙර , ලැබෙන සියලුම විවේචන ශ්‍රී ලංකා ප්‍රමිති ආයතනය විසින් සලකා බලා අවශ්‍ය වෙතොත් කෙටුම්පත සංශෝධනය කරනු ලැබේ.

මෙම කෙටුම්පතට අදාල යෝජනා හා විවේචන නියමිත දිනට පෙර ලැබෙන්නට සැලැස්වුවහොත් අගය කොට සලකමු. තවද, මෙම කෙටුම්පත පිළිගත හැකි බැව් හැගෙන අය ඒ බව දන්වන්නේ නම් එය ආයතනයට උපකාරි වනු ඇත.

මේ පිළිබඳව එවන සියලුම ලිපි පහත සඳහන් ලිපිනයට එවිය යුතුය.

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17, වික්ටෝරියා පෙදෙස,
ඇල්විටිගල මාවත,
කොළඹ 08.

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Introduction

This Draft Sri Lanka Standard has been prepared by the Sri Lanka Standards Institution and is now being circulated for technical comments to all interested parties.

All comments received will be considered by the SLSI and the draft if necessary, before submission to the Council of the Institution through the relevant Divisional Committee for final approval.

The Institution would appreciate any views on this draft which should be sent before the specified date. It would also be helpful if those who find the draft generally acceptable could kindly notify us accordingly.

All Communications should be addressed to:

The Director General
Sri Lanka Standards Institution,
17, Victoria Place,
Elvitigala Mawatha,
Colombo 08.

DRAFT AMENDMENT NO: 01 TO SLS 1342 : 2018

SRI LANKA STANDARD
SPECIFICATION FOR HAIR SHAMPOO FOR BABIES
(First Revision)

SRI LANKA STANDARDS INSTITUTION

Draft Amendment No: 01 approved on ..... to SLS 1342 : 2018

SRI LANKA STANDARD
SPECIFICATION FOR HAIR SHAMPOO FOR BABIES
(First Revision)

3 REQUIREMENTS

TABLE 1 : Requirements for baby shampoo

Delete the S. No. i) given in Table **1** and substitute the following:

i)	Active surfactant content, per cent by mass, Min.	3	
	(a) Synthetic anionic ingredient content		Appendix **B**
	or		
	(b) Non-ionic and/ or anionic ingredient content		Appendix **C**

Change the Appendix **C** and **D** given in Column **4** of Table **1** as Appendix **D** and **E** respectively.

Insert the new Appendix as Appendix **C**.

APPENDIX C
DETERMINATION OF NON–IONIC AND/OR ANIONIC INGREDIENT CONTENT

C.1 PRINCIPAL

C.1.1 For non-ionic surfactants

Ethylene oxide adducts produce a blue colour complex with cobaltothiocyanate. The complex is soluble in dichloromethane (methylene chloride) and can be extracted rapidly from an aqueous solution. The depth of colour is related linearly to the concentration of the non- ionic surfactants.

C.1.2 For Coco- glucoside non –ionic surfactants

Anthrone reagent produces green colour on reaction with coco-glucoside non-ionic surfactant. This method involves determination of non-ionic surfactant (coco-glucoside) by UV spectrophotometry using photometric mode at wavelength 620 nm, Max.

C.1.3 For anionic surfactants

When equivalent amounts of cationic and anionic surfactants are present in a two-phase mixture of distilled water and chloroform, methylene blue will colour the two phases to the same degree. Sodium alkyl benzene sulphonate and sodium lauryl sulphate or any other surfactant can be titrated with a standard solution of cetyl trimethyl ammonium bromide.

C.2 APPARATUS

C.2.1 UV Spectrophotometer

C.2.2 Separating funnel of 125 ml capacity.

C.2.3 Volumetric flasks, with capacity of 1 litre, 250-ml, 200-ml, 100-ml, 50-ml, 25-ml, 20-ml, and 10-ml pipettes and 250 ml and 100 ml stopper cylinder. Erlenmeyer flask of capacity 250-ml

C.2.4 Membrane filters (0.45 µ) Whatman filer paper No. 41 or equivalent.

C.2.5 Weighing balance, to determine the mass of the container to an accuracy of 0.1 mg.

C.2.6 Desiccator

C.2.7 Water bath

C.2.8 Stop watch, least count, 1 s.

C.3 REAGENTS

C.3.1 Dichloromethane, analytical reagent grade.

C.3.2 Acid Phosphate buffer

Dissolve 100 g Sodium dihydrogen orthophosphate, analytical reagent grade in distilled water and dilute to 1 liter.

C.3.3 Cobaltothiocyanate reagent

Dissolve 30 g Cobalt nitrate (analytical reagent grade), 143 g Ammonium chloride and 256 g Potassium thiocyanate (analytical reagent grade) in distilled water.

C.3.4 Methylene Blue Indicator (B.3.3)

C.3.5 Chloroform, analytical reagent grade

C.3.6 Sulphuric acid, technical grade.

C.3.7 Hydrochloric acid, technical grade

C.3.8 Formic acid Assay ≥ 98 percent.

C.3.9 Anthrone Reagent

Weigh about 0.08 g of anthrone (technical grade) and dissolve in 100 ml of 80 percent Sulphuric acid. Warm the solution on water bath, if required, for complete dissolution.

C.4 PROCEDURE FOR DETERMINATION OF NON- IONIC SURFACTANTS

C.4.1 Preparation of standard solution

C.4.1.1 Weigh 0.5 g of non-ionic surfactants (Tween 20) to the nearest 0.1 mg accuracy into a single 250-ml volumetric flask.

C.4.1.2 Dilute it to the volume with distilled water and mix thoroughly which is called standard stock solution.

C.4.1.3 Pipette 50 ml of the stock standard into a 100 ml volumetric flask, add 20 ml of acid phosphate buffer and dilute to volume with distilled water and mix thoroughly. The solution thus formed is called diluted standard solution.

C.4.1.4 For plotting calibration curve of standard

C.4.1.4.1 In individual 125 ml separating funnels, add 20 ml of dichloromethane, 20 ml of Cobalt thiocyanate reagent and add 2, 4, 6, 8 and 10 ml of the diluted standard solution.

C.4.1.4.2 Stopper the funnels and shake for 1 min.

C.4.1.4.3 Allow the two phases to get separated. Collect the dichloromethane layer in dry stoppered test tubes after filtering through Whatman No. 41 or any equivalent filter paper, if required.

C.4.1.4.4 Now measure the absorbance of standards against dichloromethane as a blank at 640 nm wavelength.

C.4.1.4.5 Plot the graph of absorbance (*Y*- axis) versus volume of standard taken for extraction (*X*- axis).

C.4.2 Sample Preparation

C.4.2.1 Weigh 5 g of sample to the nearest 0.1 mg accuracy into a single 250-ml volumetric flask.

C.4.2.2 Dilute to volume with distilled water and mix thoroughly which is called sample stock solution.

C.4.2.3 Pipette 50 ml of the sample stock solution into a 100-ml volumetric flask, add 20 ml of acid phosphate buffer and dilute to volume with distilled water and mix thoroughly. The solution thus formed is called diluted sample solution.

C.4.2.4 In an individual 125 ml separating funnel, add 20 ml of dichloromethane, 20 ml of Cobalto thiocyanate reagent and add 20 ml of the diluted sample solution.

C.4.2.5 Stopper the funnel and shake for one minute.

C.4.2.6 Allow the two phases to get separated. Collect the dichloromethane layer in a dry stoppered test tube after filtering through Whatman No. 41 or any equivalent filter paper, if required. In case haziness is found in sample, then transfer the dichloromethane layer in 25-ml volumetric flask and dilute to the mark with isopropanol.

C.4.2.7 Now measure the absorbance of sample against dichloromethane as a blank at 640 nm wavelength.

C.4.2.8 From the graph of standard, measure the volume of standard corresponding to the absorbance of the sample.

C.5 PROCEDURE FOR DETERMINATION OF COCO- GLUCOSIDE NON-IONIC SURFACTANTS

C.5.1 General UV Spectrophotometer settings

Measurement type	Photometry
Data mode	Absorbance
Wavelength, max	620 nm
Slit width	1.0 mm
Path length	10 mm

C.5.2 Preparation of standard solution

Weigh accurately about 0.06 g of coco-glucoside (approximately 50 percent active) into 200 ml volumetric flask. Dissolve and dilute to 200 ml volume with water and mix well.

C.5.3 Preparation of sample solution

Weigh accurately about 0.8 g of sample into 200-ml volumetric flask. Dissolve and dilute to 200 ml volume with water and mix well. Sample mass can be adjusted depending upon surfactant concentration in shampoo formulation.

C.5.4 Measurement procedure

C.5.4.1 Pipette 1.0 ml of standard solution (**C.5.2**) and sample solution (**C.5.3**) into separate Erlenmeyer flasks of capacity 250 ml. Pipette 1.0 ml of Hydrochloric acid (**C.3.7**) and 0.1 ml Formic acid (**C.3.8**) into each Erlenmeyer flask (250-ml). Pipette 8.0 ml anthrone reagent (**C.3.9**) into each Erlenmeyer flask. Place the Erlenmeyer flask on boiling water bath for 12 min (using stop watch) and allow cooling at room temperature.

NOTE
Precaution should be taken while adding anthrone reagent as it causes bubble formation.

C.5.4.2 Prepare a blank by proceeding as at **C.5.4.1** with 1.0 ml of distilled water.

C.5.4.3 Measure absorbance of standard and sample against blank solution at 620 nm and 1.0 cm path length on UV Spectrophotometer.

C.6 PROCEDURE FOR DETERMINATION OF ANIONIC SURFACTANTS

C.6.1 Preparation of standard solution

C.6.1.1 Weigh accurately a sample of sufficient size to give approximately 0.320 g of combined SO_3 into a 250-ml beaker. Sample size is crucial (*see* Note 1). Use 700 to 800 ml of warm distilled water, to transfer quantitatively to a 1 litre volume. Warm on steam bath and shake gently till sample is dissolved and the cool the solution to room temperature, dilute to the mark and mix thoroughly.

C.6.1.2 Pipette 10 ml of the sample solution into a 100 ml glass stoppered cylinder (25 mm×30 mm). Add 25 ±0.5 ml of methylene blue solution and 10 ±0.5 ml chloroform (*see* Note 2). Titrate with solution A (**B.3.1**) to the correct end point while shaking the cylinder carefully after each addition (to avoid emulsion) and maintaining temperature within prescribed limits of 20 ^{o}C to 30 ^{o}C by immersion in water bath, if necessary. As the end point is approached, shall be added dropwise with vigorous shaking after each addition. If the approximate titration volume of solution A is known 80 percent of the required titrating solution shall be added before shaking since this avoids emulsion formation. Application of vacuum to the titration cylinder may help to break some emulsions, if formed. The end point is reached when both layers have same colour intensity. The end point is very sharp and 0.1 ml will cause a distinct change in colour distribution at or near the equivalence point.

NOTES

1 *The titration value 'V'shall be as near to 10 ml as possible, may be between 8 and 12 ml, but never outside 5 and 15 ml.*

2 *The volume of methylene blue solution and chloroform may be changed if found advantageous provided the same volumes are used in standardizing solutions A and B.*

C.7 CALCULATIONS

C.7.1 For Non-ionic surfactants content

From diluted standard solution (***see*** **C.4.1.3**), calculate amount of non-ionic surfactants present per ml that is, mg/ml (Z)

From graph of absorbance against volume of diluted non-ionic surfactants taken for extraction, find out the volume of non-ionic surfactant for the absorbance of the sample (Y)

Amount of non-ionic surfactant present in Y ml of sample solution (E) = Y × Z

For 100 ml of diluted sample solution contains (D) = 5 × E

For 250 ml of stock sample solution contains (S) = 5 × D

Percent v/w of non-ionic surfactants present in sample

$$(G) = \frac{S \times 100}{\text{Mass of sample} \times 1\,000}$$

C.7.2 For Coco-glucoside non-ionic surfactants content

Percent, w/w of coco- glucoside non-ionic surfactants in sample

$$(H) = \frac{A_1 \times W_0 \times P}{A_0 \times W_1}$$

where,

A_1 is the absorbance, of sample solution;
W_0 is the mass, in g, of standard;
P is the purity, in percent, of standard;
A_0 is the absorbance of standard solution; and
W_1 is the mass, in g, of sample.

C.7.3 For anionic surfactants content

$$\text{Percent combined } SO_3 = \frac{V \times M \times 800}{m}$$

Where,

V is the volume, in ml, of solution A used in the titration;
M is the molality of solution A; and
m is the mass, in g, of the sample in the aliquot.

$$\text{Percent, w/w of anionic surfactants content (I)} = \frac{\text{Percent combined } SO_3 \times \text{Molecular mass of active surfactant}}{80}$$

C.7.4 Percent w/w of total non-ionic and anionic surfactants present in the shampoo = G + H + I

NOTE
For SLES surfactant, the molecular mass may be taken as 400, In case sodium lauryl sulphate or sodium olefin sulphonate or any other anionic surfactant is used in formulation whose molecular mass is less than 350, the actual molecular mass of surfactant as declared by the manufacture may be used for calculations.

Change the Appendix **C** and **D** as Appendix **D** and **E** and sub Clauses **C.1** to **C.2** as **D.1** to **D.2** and D.1 to **D.3** as **E.1** to **E.3** respectively.

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