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**Oils for cosmetic use — Specification —
Part 6: Calabash oil**

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Foreword

Rwanda Standards are prepared by Technical Committees and approved by Rwanda Standards Board (RSB) Board of Directors in accordance with the procedures of RSB, in compliance with Annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards.

The main task of technical committees is to prepare national standards. Final Draft Rwanda Standards adopted by Technical committees are ratified by members of RSB Board of Directors for publication and gazettment as Rwanda Standards.

DRS 489—6 was prepared by Technical Committee RSB/TC 011, Cosmetics and related products.

This first edition cancels and replaces the first edition of RS 389: 2019, of which has been technically revised.

DRS 489 consists of the following parts, under the general title Oils for cosmetic use — Specification:

- *Part 1: Baobab seed oil*
- *Part 2: Chia seeds oil*
- *Part 3: Passion fruits (maracuja) seed oil*
- *Part 4: Castor oil*
- *Part 5: Macadamia oil*

Committee membership

The following organizations were represented on the Technical Committee on Cosmetics and Related Products (RSB/TC 011) in the preparation of this standard.

ALYVO RWANDA Ltd

Beauty Makers Association (BMA)

GAKO Organic Farming Training Center (GOFTC/Rwanda All Green Investment Ltd)

J&K

KAN-HAN Ltd

MORIJA Cosmetics/Morija Supply Ltd

National Industrial Research and Development Agency (NIRDA)

PHARMACIE NOVA

Rwanda Agriculture Livestock Inspection and Certification Services (RALIS)

Rwanda Biomedical Center (RBC)

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Rwanda Forensic Laboratory (RFL)

Rwanda Inspectorate, Competition and Consumer Protection Authority (RICA)

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Introduction

Calabash (*Lagenaria sphaerica* – Umutanga) is an annual herbaceous climber coming from Cucurbitaceae family which has traditionally been collected in Rwanda and used for medicinal purposes as a soothing and healing agent. Calabash oil contains more than 55 % of unsaturated fatty acids. The major unsaturated components are linoleic acid (omega-3) and oleic acid (omega-9) and sterolic compounds such as spinasterol. These plants are generally found in low-lying areas from the Eastern Cape of South Africa to East Africa. They may grow along river floodplains or up into the canopy of riparian forests. They may also be found in coastal dune vegetation.

Calabash oil is extremely rich in fatty acid content. These acids not produced by the body, must be supplemented to maintain the health and appearance of the skin and hair. They are essential to maintaining normal cell renewal and optimal moisture content of the epidermal skin barrier.

The composition of Calabash makes it a valuable ingredient in hair conditioning and moisturizing hair and scalp formulations. Linoleic acid has antioxidant and anti-inflammatory properties making it useful for dry, scaly skin conditions. Other present compounds provide soothing effects and defence against infection.

Oils for cosmetic use — Specification — Part 6: Calabash oil

1 Scope

This Draft Rwanda Standard specifies the requirements, sampling and test method for calabash oil for cosmetic industry. This standard does not cover the calabash oil for which therapeutic claims are made.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

RS EAS 346, *Labelling of cosmetics — General requirements*

RS EAS 846, *Glossary of terms relating to the cosmetic industry*

RS EAS 847 – 2, *Cosmetics — Analytical methods — part 2: Determination of moisture content and volatile matter content*

RS EAS 847-5, *Cosmetics — Analytical methods — Part 5: Determination of unsaponifiable matter*

RS EAS 847-7, *Cosmetics — Analytical methods — Part 7: Determination of specific gravity*

RS EAS 847-9, *Cosmetics — Analytical methods — Part 9: Determination of colour*

RS EAS 847-10, *Cosmetics — Analytical methods — Part 10: Determination of acetyl value and hydroxyl value*

RS EAS 847-12, *Cosmetic — Analytic methods — Part 12: Determination of flash point by Pensky — Martens Closed Cap Tester*

RS EAS 847-13, *Cosmetic — Analytic methods — Part 13: Determination of rancidity*

RS EAS 847-16, *Cosmetic — Analytic methods — Part 16: Determination of lead, mercury and arsenic content*

RS ISO 22717, *Cosmetics — Microbiology — Detection of Pseudomonas aeruginosa*

RS ISO 22718, *Cosmetics — Microbiology — Detection of Staphylococcus aureus*

RS ISO 18416, *Cosmetics — Microbiology — Detection of Candida albicans*

RS ISO 660, *Animal and vegetable fats and oils — Determination of acid value and acidity*

RS ISO 663, *Animal and vegetable fats and oils — Determination of insoluble impurities content*

RS ISO 3657, *Animal and vegetable fats and oils — Determination of saponification value*

RS ISO 3961, *Animal and vegetable fats and oils — Determination of iodine value*

RS ISO 6320, *Animal and vegetable fats and oils — Determination of refractive index*

RS 278, *Cosmetics — Methods of sampling*

RS ISO 6887-1, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 1: General rules for preparation of the initial suspensions and decimal dilutions*

3 Terms and definitions

For the purposes of this standard, the terms and definitions given in RS EAS 846 and the following apply.

calabash oil

pure refined oil obtained from the seeds of the *Lagenaria sphaerica* (Umutanga) tree, an annual herbaceous climber coming from Cucurbitaceae family which is generally found in low-lying areas from the Eastern Cape of South Africa to East Africa.

4 Requirements

4.1 General requirements

4.1.1 The product shall be calabash oil obtained from seed of the calabash tree (*Lagenaria sphaerica* – Umutanga), by a cold or heat pressing, followed by a full refining process to render an oil which is light in colour and mild in colour.

4.1.2 When examined visually, the product shall be:

- a) clear;
- b) free from sediments and other foreign matter;
- c) free from water, colouring and flavouring substances; and
- d) free from admixture with other oils.

4.2 Specific requirements

4.2.1 The product shall comply with the requirements given in Table 1 when tested in accordance with the methods specified therein.

Table 1 — Specific requirements for calabash oil for cosmetic use

S/N	Parameters	Requirements	Test method
i.	Moisture content, % m/m, max.	0.1	RS EAS 847-2
ii.	Insoluble impurities, % m/m, max.	0.25	RS ISO 663
iii.	Colour in a 1" cell on the Lovibond scale, expressed as Y + 5R, max. deepness	4.0	RS EAS 847-9
iv.	Refractive index at 20 °C, range	1.4650 – 1.4800	RS ISO 6320
v.	Specific gravity at 20 °C, range	0.915 – 0.930	RS EAS 847-7
vi.	Saponification value, range	185 - 197	RS ISO 3657
vii.	Iodine value, range	120 - 145	RS ISO 3961
viii.	Acid value, max.	10	RS ISO 660
ix.	Unsaponifiable matter, % m/m, max.	1.5	RS EAS 847-5
x.	Acetyl value, min.	143	RS EAS 847-10
xi.	Flash point, °C (Pensky Martens closed), min.	250	RS EAS 847-12
xii.	Test for rancidity	Shall be free from rancidity	RS EAS 847-13
xiii.	Critical solution temperature, °C max.	0	Annex A

4.2.2 The products shall comply with the limits for heavy metal contaminants in accordance with Table 2, when tested in accordance with the methods specified therein.

Table 2 — Limits for heavy metal contaminants for calabash oil for cosmetic use

S/N	Characteristics	Maximum limit (mg/kg)	Test method
i.	Lead	10	RS EAS 847-16
ii.	Arsenic	2	
iii.	Mercury	2	
- The total amount of heavy metals as lead, mercury and arsenic, in combination, in the finished product should not exceed 10 mg/kg. - The heavy metals including lead, mercury and arsenic may be as a result of contamination during processing and should not be deliberately added as ingredients.			

4.2.3 The products shall also comply with the microbiological limits given in Table 3 when tested in accordance with the methods specified therein.

Table 3 — Microbiological limits for Calabash oil for cosmetic use

S/N	Microorganism	Maximum limit	Test method
i.	Total viable count for aerobic mesophyllic micro- organisms per g.	100	RS ISO 6887-1
ii.	<i>Pseudomonas aeruginosa</i>	Not detected in 0.5 g	RS ISO 22717
iii.	<i>Staphylococcus aureus</i>		RS ISO 22718
iv.	<i>Candida albicans</i>		RS ISO 18416

5 Packaging

The product shall be packaged in suitable well-sealed containers that shall protect the contents and shall not cause any contamination or react with the products.

6 Labelling

6.1 In addition to the requirements of RS EAS 346, the Material Safety Data Sheet shall be provided.

6.2 The phrase 'For external use only' shall be conspicuously marked (either printed on the label affixed to the container, or lithographed, or stencilled thereon with indelible ink).

7 Sampling

Random samples of the product shall be drawn for test in accordance with RS 278 from the market or factory.

Annex A (normative)

Determination of critical solution temperature

A.1 Reagent

The reagent shall be prepared by diluting ethyl alcohol or rectified spirit with distilled water till the relative density of the mixture at 15.5 °C is 0.8303 ± 0.0001 , when compared with distilled water at the same temperature. De-natured alcohol shall not be used for this test.

A.2 Procedure

Mix in a test tube, 1.0 g of the oil, with 4.15 times its mass of the reagent. Upon examination, the solution thus obtained shall be perfectly clear at 20 °C and shall remain clear when cooled and maintained for 5 minutes at a temperature of 0 °C.

DRS for public review

Bibliography

- [1] Danjuma, M.N. and Dandago 2009, M.A., Extraction and characterization of calabash seed oil

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