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DRAFT UGANDA STANDARD

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Glycerine for Cosmetic use— Specification

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Foreword

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(a) a member of International Organisation for Standardisation (ISO) and

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Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

The committee responsible for this document is Technical Committee UNBS/TC 5, *Chemicals and Environment products.*

Glycerine for Cosmetic use— Specification

1 Scope

This draft Uganda standard specifies requirements, sampling and test methods for glycerine for cosmetic use.

2 Normative references

The following referenced documents 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.

FDEAS 846, *Glossary of terms relating to the cosmetic industry*

FDEAS 847- 2, Oils for cosmetic industry — Methods of test — Part 2: Determination of Moisture Content

FDEAS 847-7, *Oils for cosmetic industry — Methods of test — Part 7: Determination of specific gravity*

FDEAS 847-16, Oils for cosmetic industry — Methods of test — Part 16: Determination of Heavy metal Content

FDUS ISO 24153 —.*Random sampling and randomisation procedures*

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

US EAS 377-1, *Cosmetics and cosmetic products — Part 1: List of substances prohibited in cosmetic products*

US EAS 377-2, *Cosmetics and cosmetic products — Part 2: List of substances which cosmetic products must not contain except subject to the restrictions laid down*

US EAS 377-3, *Cosmetics and cosmetic products — Part 3: List of colorants allowed in cosmetic products*

US EAS 377-4, *Cosmetics and cosmetic products — Part 4: List of preservatives allowed in cosmetic products*

US EAS 377-5, *Cosmetics and cosmetic products — Part 5: Use of UV filters in cosmetic products*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in FDEAS 846, the following term and definition apply. ISO and IEC maintain terminological databases for use in standardization at the following addresses: — ISO Online browsing platform: available at http://www.iso.org/obp

3.1
specific gravity
ratio of the density of a material to the density of a standard material such as water (for liquids) or air (for gases)

4 Requirements

4.1 General requirement

The product shall be clear syrupy liquid containing essentially of glycerol and having a sweet warm taste. It shall also be free from free from sediment, suspension and other foreign matter. The product shall comply with the requirements in US EAS 377-parts 1-5.

4.2 Solubility

The product shall be miscible in all proportions with water and with ethyl alcohol (90%v/v) and shall not be soluble in diethyl ether, chloroform and fatty oils

4.3 Specific quality requirements

The product shall comply with the requirements given in table 1

Table 1 — Specific quality requirements

Characteristics	Requirement	Test method
Glycerol ,percent by mass, Min	98	Annex A
Water content , percent by mass, max	2	FDEAS 847- 2:
Specific gravity, at 25 °C	1.2490-1.2636	FDEAS 847-7
Ash, percent by mass, Max	0.01	FDEAS 847-15
Alkalinity (as Na_2O), percent by mass, Max	0.01	Annex B
Chlorides (a s Cl) , ppm, Max	10	Annex C
Sulphates (as SO4), ppm, Max	10	Annex D
Fatty acids and esters (as Na_2O), percent by mass, Max	0.06	Annex E
Heavy metals ppm, Max	Lead — 5	FDEAS 847- 16
	Arsenic — 2	
	Mercury — 2	

4.4 weights and measures

The fill and volume of the material shall comply with the requirements of the Weights and Measures Act.

5 Packing and labelling

5.1 Packing

The container (including the closure) in which the glycerine is packaged shall not react chemically with the glycerine and shall be strong enough to protect the product adequately during handling, transportation and storage.

5.2 Labelling

In addition to the labelling requirements outlined in US EAS 346, the package shall be legibly marked with the following information:

a) manufacturer's name and physical address;

b) product name, “glycerine”,

c) net mass of the product when packed;

d) batch number;

e) country of origin;

f) instruction for use;

g) Date of manufacture and expiry; and

h) Precaution/warning.

6 Sampling

Representative samples of the product shall be drawn randomly for test in accordance with FDUS ISO 24153 from the market, factory or elsewhere.

Annex A
(normative)

Determination of glycerol content

A.1 Apparatus

A.1.1 Burette

A.1.2 Pipette

A.1.3 500 ml capacity conical flasks with glass stopper

A.1.4 weighing pipette / bottle

A.2 Reagents

A.2.1 Accurately standardized 0.1 N sodium hydroxide solution.

A.2.2 0.05 N sodium hydroxide

A.2.3 0.05% m/v Phenol red indicator

Dissolve 0.05 g of phenol red in 10 ml of ethyl alcohol and make up to100 ml with water

A.2.4 0.2 N dilute sulphuric acid.

A.2.5 Sodium metaperiodate solution

Dissolve 70 g of sodium metaperiodate in one litre of water containing 10 ml of 1 N sulphuric acid and store the solution in an amber coloured bottle in the dark.

NOTE — Sodium metaperiodate shall be a white crystalline powder containing not less than 98 percent sodium metaperiodate.

A.2.6 Ethylene glycol

Neutral and free from glycerol

A.2.7 Standard glycerol

A.3 Procedure

A.3.1 Using a weighing pipette or bottle, transfer into a conical flask a well mixed and accurately weighed sample.

A.3.2 Add 100ml of carbon dioxide- free water and 3 drops of phenol red indicator solution and acidify with sulphuric acid solution to define yellow colour. Heat to boiling and cool to room temperature.

A.3.3 Adjust the pH value to 8.0 ± 0.1 using 0.05 N sodium hydroxide solution dropwise until the colour changes to just pink. If the colour of the original solution interferes with the detection of colour change of the indicator, use a pH meter.

A.3.4 Pipette accurately 50ml of sodium metaperiodate solution, replace the glass stopper, mix by swirling gently and allow the flask to stand in the dark for 30 minutes.

A.3.5 Wash down the sides of the flask with water, add 5 ml of ethylene glycol, replace the stopper, swirl gently and allow the flask to stand in the dark for further 20 minutes and titrate with standardized 0.05 N sodium hydroxide solution.

A.3.6 Carry out a blank test simultaneously under similar test conditions

A.4 Calculation

Glycerol content, Percent by mass = $\frac{9.209(S-B)N}{M}$

Where;

S volume in ml of standard sodium hydroxide solution required for the sample,

B volume in ml of standard sodium hydroxide solution required for the blank,

N normality of standard sodium hydroxide solution, and

M mass in grams of the sample taken for test

Each ml of 0.05 N sodium hydroxide is equivalent to 9.210 mg of C3H8O3.

Annex B
(normative)

Test for alkalinity

B.1 Apparatus

B.1.1 Conical flask — 500ml

B.1.2 burette

B.2 Reagents

B.2.1 Standardized 0.1N Hydrochloric acid

B.2.2 Phenolphthalein indicator solution

B.3 Procedure

B.3.1 Weigh accurately about 100 g of a well mixed sample into 500 ml conical flask and add 150 ml of carbon dioxide free water

B.3.2 Titrate with standardized 0.1N HCl using phenolphthalein indicator.

B.4 Calculation

Alkalinity (Na_2O), percent by mass = $\frac{3.1 \times A \times N}{M}$

Where:

A Volume in ml of standardized 0.1N HCl

N Normality of standardized 0.1N HCl

M mass of sample taken

Annex C
(normative)

DETERMINATION OF CHLORIDES (Volumetric Method)

C.1 Apparatus

250 ml capacity conical flasks

C.2 Reagents

C.2.1 35 % v/v solution of nitric acid

C.2.2 Nitrobenzene

C.2.3 Accurately standardized. 0.05 N silver nitrate solution

C.2.4 Accurately standardized. 0.05 N ammonium thiocyanate solution

C.2.5 saturated, aqueous Ferric ammonium sulphate solution

C.3 Procedure

C.3.1 Weigh accurately about 20 g of the sample in a 250-ml conical flask and add about 100 ml of water.

C.3.2 To this solution, add 5 ml of nitric acid, a few drops of nitrobenzene and 5 ml of standard 0.05 N silver nitrate solution.

C.3.3 Swirl and titrate with standardized 0.05 N ammonium thiocyanate solution using 1 ml of ferric ammonium sulphate solution as indicator. Carry out a blank test using the same reagents.

C.4 Calculation

Chlorides (as Cl), parts per million = $\frac{35500(B-S)N}{M}$

Where:

B volume in ml of standard ammonium thiocyanate solution required for the blank,

S volume in ml of standard ammonium thiocyanate solution required for the sample,

N normality of standard ammonium thiocyanate solution, and

M mass in g of the material taken for the test.

Annex D
(normative)

Determination of sulphates

D.1 Apparatus

D.1.1 25-ml capacity Nessler Cylinders

D.1.2 1 ml capacity Pipette with 0.01 ml graduations

D.2 Reagents

D.2.1 Hydrochloric Acid

1: 1 solution of hydrochloric acid in water.

D.2.2 Barium Chloride Solution

10 percent (m/v), aqueous

D.*2.3* Standard Sulphate Solution

Dissolve 1.479 g of anhydrous sodium sulphate in water and make up to 1 litre in a volumetric flask. Dilute this stock solution 10 times immediately before use. One millilitre of this solution contains 0.000 1 g of SO_4.

D.3 Procedure

D.3.1 Weigh accurately about 10 g of the sample into a Nessler cylinder, add 1 ml of hydrochloric acid and 2 ml of barium chloride solution, and make up to 25 ml with water. Allow to stand for 30 minutes. A dull white turbidity is produced if sulphates are present.

D.3.2 Simultaneously, introduce 0.5 ml, 0.75 ml, 1.0 ml and 1.25 ml of standard sulphate solution into 4 separate Nessler cylinders. In each, add 1 ml of hydrochloric acid and 2 ml of barium chloride solution, and make up to 25 ml with water. Allow to stand for 30 minutes.

D.3.3 Note which one of these four solutions has a turbidity most closely matching that produced by the test material (see F.3.1). Repeat the test and note the volume of standard sulphate solution required to produce a turbidity exactly matching that of the test sample.

D.4 Calculation

Sulphates (as SO_4), parts per million = $\frac{100 \times V}{M}$

Where;

V = volume in ml of standard sulphate solution used, and

M = mass in g of the material taken for the test.

Annex E
(normative)

Determination of fatty acids and esters.

E.1 Apparatus

E.1.1 500-ml round-bottomed flask

E.1.2 pH meter

E.2 Reagents

E.2.1 Accurately standardized 0.25 N sodium hydroxide solution

E.2.2 Accurately standardized 0 25 N sulphuric acid

E.2.3 phenolphthalein indicator solution

E.3 Procedure

E.3.1 Weigh accurately about 50 g of the sample into a 500-ml round-bottomed flask. Add 100 ml of hot, carbon dioxide-free water and 1 ml of phenolphthalein indicator solution. If the solution is alkaline, neutralize it with sulphuric acid

E.3.2 Add exactly 15.0 ml of standard sodium hydroxide solution, connect the flask to a reflux condenser and heat to boiling. Boil for 5 minutes, allow to cool slightly and wash down the condenser with a little water. Disconnect the flask, close it with a stopper carrying a sodalime tube, and cool.

E.3.3 Titrate with standardized 0.25 N sulphuric acid and perform a blank determination.

E.4 Calculation

Fatly acids and esters, as Na2O, percent by mass = $\frac{3.1(B-S)N}{M}$

Where;

B volume in ml of standard sulphuric acid required for the blank,

S volume in ml of standard sulphuric acid required for the material,

N normality of standard sulphuric acid, and

M mass in g of the material taken for the test

Bibliography

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[4] IS 12590 (1988): *Glycerine for Cosmetic Industry*

[5] Physical Properties of Glycerine and Its Solutions

[6] USP 29- NF *24 page 1011, pharmacopeial forum volume 28 (4) page 1245*

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