
Toilet soap — Specification

In order to match with technological development and to keep continuous progress in industries, Standards are subject to periodic review. Users shall ascertain that they are in possession of the latest edition

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National foreword

This Rwanda Standard is identical with the second edition 2013 of regional Standard EAS 186/2013 Toilet soap — Specification.

It was approved by the RBS Board of Directors in accordance with Rwanda Bureau of Standards procedures, in compliance with annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards and the EAC Standardization, Quality Assurance, Metrology and Testing (SQMT) Act, 2006.

This standard replaces RS 76, *Toilet soap — Specification*, which has become technically obsolete due to international developments.

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ICS 71.100.40



EAS 186: 2013

ICS 71.100.40

EAST AFRICAN STANDARD

Toilet soap — Specification

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EAST AFRICAN COMMUNITY

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

EAS 186 was prepared by Technical Committee EAS/TC 074, *Surface active agents*.

This third edition cancels and replaces the second edition (EAS 186: 2011) which has been technically revised.

Toilet soap — Specification

1 Scope

This East African Standard specifies requirements, sampling and test methods for toilet soap. It does not apply to carbolic soap or specialty soaps such as medicated soap, transparent soap, floating soap, liquid soap or sea-water soap.

2 Normative references

The following referenced documents are indispensable for the application 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.

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

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

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

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

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

ISO 457, *Analysis of soap — Determination of chloride content — Titrimetric method*

ISO 456, *Surface active agents — Analysis of soaps — Determination of free caustic alkali*

ISO 684, *Analysis of soap — Determination of total free alkali*

ISO 685, *Analysis of soap — Determination of alkali content and total fatty matter content*

ISO 673, *Analysis of soap — Determination of ethanol insoluble matter*

ISO 862, *Surface active agents — Vocabulary*

ISO 1067, *Analysis of soap — Determination of unsaponifiable, unsaponified and unsaponified saponifiable matter*

3 Terms and definitions

For the purposes of this East African Standard the terms and definitions given in ISO 862 and the following apply.

3.1

soap

product formed by the saponification or neutralization of fats, oils, waxes, rosins or their acids with organic or inorganic bases

3.2

toilet soap

soap which is intended for use in bathing

3.3

saponification

chemical reaction in which a fat is converted into a soap by the action of a base

3.4**colouring matter**

any safe dyestuff that may be used to colour toilet soap

3.5**free caustic alkali**

uncombined caustic alkali present in a soap

3.6**total fatty matter**

water-insoluble or ether soluble fatty matter under the specified conditions of test

3.7**total free alkali**

sum of the free caustic alkali and the free carbonate alkali contents

4 Requirements**4.1 General requirements**

4.1.1 Toilet soap shall not cause skin irritation and shall have good lathering and cleansing properties.

4.1.2 Toilet soap shall be firm and of uniform texture and colour and shall be free from objectionable (disagreeable) odour.

4.1.3 Perfumes and colouring matter may be added.

4.1.4 Toilet soap shall remain hard and smooth and shall also not crumble when tested in accordance with Annex A.

4.1.5 All the substances used in toilet soap shall comply with the requirements of all parts of EAS 377.

4.2 Specific quality requirements

Toilet soap shall comply with the specific quality requirements specified in Table 1.

Table 1 — Specific quality requirements

| S/No. | Characteristic | Requirement | Method of test |
|-------|--|-------------|----------------|
| i. | Total fatty matter content, % by mass, min | 76.0 | ISO 685 |
| ii. | Content of matter insoluble in ethanol, % by mass, max | 2 | ISO 673 |
| iii. | Free caustic alkali content as NaOH, % by mass, max | 0.1 | ISO 456 |
| iv. | Free fatty acids content as oleic acid, % by mass, max | 0.3 | Annex B |
| v. | Chlorides content as NaCl, % by mass, max | 0.8 | ISO 457 |
| vi. | Unsaponified fatty matter content, % by mass, max | 0.5 | ISO 1067 |

NOTE Toilet soap is liable to lose moisture on storage. The results of analysis in respect to free caustic alkali, free carbonated alkali and matter insoluble in alcohol should be recalculated in relation to the minimum specified total fatty matter by means of the following equation:

$$\text{Corrected result} = \frac{\text{actual result} \times \text{minimum specified total fatty matter}}{\text{actual total fatty matter}}$$

The corrected results should be used to determine whether the product is up to standard.

5 Packaging and marking

5.1 Packaging

Toilet soap shall be so wrapped as to protect them from damage and excessive loss or gain of moisture.

5.2 Marking

Toilet soap shall be marked legibly and indelibly with the following information:

- a) name of product as "Toilet soap";
 - b) manufacturer's name and physical address;
- NOTE The name, physical address of the distributor/supplier and trade mark may be added as required.
- c) batch number or lot number;
 - d) Total Fatty Matter content (TFM);
 - e) net content;
 - f) country of origin;
 - g) list of ingredients in descending order of quantity; and
 - h) date of manufacture and best before date.

6 Sampling

Sampling shall be done in accordance to Annex C.

7 Criteria for conformity

The lot shall be deemed to comply with the requirements of this standard if, after inspection and testing, the requirements of Clause 4 and 5 are satisfied.

Annex A
(normative)

Texture and stability test

When immersed in 1 L of distilled water for 1 h at 25 °C – 30 °C, toilet soap shall not show signs of disintegration, and when dried at room temperature for 25 h thereafter, it shall not crumble, crack or break.

Annex B
(normative)

Determination of free fatty acids content as oleic acid

B.1 Barium chloride method

B.1.1 Apparatus

B.1.1.1 500 mL conical flask.

B.1.1.2 Reflux condenser to fit the flask.

B.1.2 Reagents

B.1.2.1 **Distilled water or water**, of at least equivalent purity, free from carbon dioxide.

B.1.2.2 **Ethanol**, 95 per cent (V/V), free from carbon dioxide and distilled over potassium hydroxide.

B.1.2.3 **Ethanol**, aqueous solution 60 per cent (V/V), neutralized.

Mix 125 mL ethanol (B.1.2.2), 75 mL distilled water (B.1.2.1) and 1 mL of indicator (B.1.2.7). Neutralize to a violet colour with an aqueous solution of potassium or sodium hydroxide (B.1.2.4). Heat under reflux for 10 min. Allow to cool to room temperature. Add 1 mL of indicator (B.1.2.7). Neutralize with the hydrochloric acid solution (3.5.6) until the violet colour disappears.

B.1.2.4. **Potassium or sodium hydroxide**, 0.1 N aqueous solution.

B.1.2.5 **Barium chloride**, aqueous solution.

Dissolve 10 g of barium chloride dihydrate ($\text{BaCl}_2 \cdot 2\text{H}_2\text{O}$) in 90 ml of distilled water (B.1.2.1). Neutralize with potassium or sodium hydroxide (B.1.2.4) in the presence of indicator (B.1.2.7) until a violet colour appears.

B.1.2.6. **Hydrochloric acid**, 0.1 N aqueous solution, accurately standardized.

B.1.2.7 **Indicator mixture**, phenolphthalein-thymol blue, ethanolic solution.

Dissolve 1 g of phenolphthalein and 0.5 g of thymol blue in 100 ml of hot ethanol (B.1.2.2). Filter.

B.2 Procedure

Weigh, to the nearest 0.01 g, about 5 g of soft soap into a conical flask (B.1.1.1). Add 200 ml of ethanol (B.1.2.3). Connect the reflux condenser (B.1.1.2). Bring to the boil for 10 min. Add an excess of 0.1 N ethanolic potassium hydroxide solution of exactly known normality.

Add to this boiling solution 20 mL of barium chloride solution (B.1.2.5) in small portions shaking thoroughly. Cool with running water to room temperature.

Add 1 mL of the indicator mixture (B.1.2.7). Titrate immediately with the hydrochloric acid solution (B.1.2.6) until the violet colour disappears.

B.3 Expression of results

The free fatty acids as oleic acid, expressed as a percentage (m/m) of potassium hydroxide, is given by the formula

$$\frac{5.6 \times V \times T}{m}$$

Where

V is the number of ml of hydrochloric acid solution (B.1.2.6) used;

T is the exact normality of the hydrochloric acid solution (B.1.2.6) used;

m is the mass, in g, of the test portion.

Annex C (normative)

Sampling

C.1 Procedure

C.1.1 In a single consignment, all packages (cartons) containing toilet soap cakes drawn from the same batch of production shall constitute a lot. For ascertaining the conformity of the lot to the requirements of this standard, tests shall be carried out on each lot separately. The number of packages to be selected for drawing the sample shall be in accordance with Table C.1.

Table C.1 — Scale of sampling

| Number of packages (cartons) in the lot <i>N</i> | Number of packages (cartons) to be selected <i>n</i> | Number of samples |
|---|---|-------------------|
| 4 to 15 | 3 | 3 |
| 16 to 40 | 4 | 4 |
| 41 to 65 | 5 | 2 |
| 66 to 110 | 7 | 2 |
| 111 and above | 10 | 1 |

C.1.2 The packages shall be selected at random, using tables of random numbers. If these are not available, the following procedure shall be applied:

Starting from any package, count all the packages in one order as 1, 2, 3.... *N*, selecting every k^{th} package, where k is the integral part of $N \div n$.

C.1.3 From each package thus selected, draw at random an equal number of cakes so as to obtain a total mass of at least 2 kg.

C.2 Preparation of test samples

C.2.1 Composite sample

Weigh each cake separately (including any material that may have adhered to the wrapper), and calculate the average mass. Cut each of the remaining cakes into eight parts by means of three cuts at right angles to each other through the middle. Grate finely the whole of two diagonally opposite eighths of each specimen. Mix the gratings and place in a clean, dry, airtight glass container.

C.2.2 Samples for testing

Immediately after preparation of composite sample (C.2.1), take at one time all test samples required for the tests in 4.2. Weigh out the test sample required for determination of free alkali or acid content, and use it immediately.

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