DEAS 793-1: 2026

ICS 71.100.40

DRAFT EAST AFRICAN STANDARD

Toilet cleanser — Specification — Part 1: Acidic liquid — Specification

EAST AFRICAN COMMUNITY

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Third Edition 2026

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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.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. 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 Principles and procedures for development of East African Standards.

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.

The committee responsible for this document is Technical Committee EASC/TC 074, *Surface active agents*.

This third edition cancels and replaces the second edition (EAS 793-1: 2022), which has been technically revised.

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Liquid toilet cleanser — Specification — Part 1: liquid — Specification

1 Scope

This Draft East African Standard specifies requirements, sampling and test methods for liquid toilet cleaners intended for cleaning toilet bowls, urinals and other ceramic surfaces.

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.

ISO 862, *Surface active agents — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 862 and the following 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

— IEC Online browsing platform: available at https://www.iecee.org/

3.1
toilet cleaner
product used for cleaning toilet bowls, urinal surfaces and other ceramic surfaces

4 Requirements

4.1 General requirements

4.1.1 Liquid toilet cleaner shall be a homogeneous aqueous liquid with a distinct colour.

4.1.2 Liquid toilet cleaner shall be miscible in water in all proportions.

4.1.3 Liquid toilet cleaner shall be stable, and not deteriorate in storage when kept in its original unopened container at ambient temperature.

4.1.4 Liquid toilet cleaner shall not affect intended surfaces when used as directed by the manufacturer.

4.1.5 Liquid toilet cleaners shall be free from visible foreign matter.

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4.2 Specific requirements

Liquid toilet cleaner shall comply with the specific requirements given in Table 1 when tested in accordance with the test methods specified therein.

Table 1 — Specific requirements for liquid toilet cleaner

S/No.	Parameter	Requirement			Test method
		Acidic	Alkaline	Neutral	
i.	Total acidity, % m/m	7 – 12	10 – 13	NA	Annex A
ii.	pH, neat at 25 °C	NA	9 – 12	6 – 8	ISO 4316
iii.	Total surfactant, % m/m, min.	0.4	5	5	Annex B
iv.	Rust inhibition	To pass the test	NA	NA	
v.	Biodegradability of surfactant	To pass the test	NA	NA	Annex C
vi.	Total alkalinity, % m/m	NA	10 – 14	NA	ISO 4315
vii.	Total acidity, % m/m	7 – 12	NA	NA	Annex A
viii.	pH, neat at 25 °C	NA	NA	6 – 8	ISO 4316
ix.	Total surfactant, % m/m, min.	0.4	2	5	Annex B
x.	Corrosion inhibition	To pass the test	NA		Annex C
xi.	Biodegradability	To pass the test	NA		EAS 814
xii.	Cleaning efficacy	To pass the test	NA		Annex E

5 Packaging

5.1 The liquid toilet cleaner shall be packed in suitable containers that are securely closed, impervious to the product or shall not be corroded by the product.

5.2 The package shall be sufficiently strong to prevent contamination of the product arising from the ordinary risks of transportation, handling and storage.

5.3 The lid or cap on the container shall be such that the product is easily and safely dispensed from the container.

6 Labelling

Each package shall be legibly and indelibly labelled in English and/or any other official language (French, Kiswahili, etc.) used in the importing East African Partner State with the following information

a) name of the product as “Liquid toilet cleaner”;

b) indication of whether acidic, alkaline or neutral;

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c) manufacturer’s name and physical address. The name, physical address of the distributor/supplier and trademark may be added;

d) batch or lot number;

e) net content in litres;

f) list of ingredients;

g) country of origin;

h) storage instructions;

i) disposal instructions,

j) instructions for use.date of manufacture

k) expiry date;

l) hazard and precautionary statements or hazard pictogram/symbols and signal words. In addition to (j) the following information shall be marked:

i) “Read label before use”;

ii) “Keep out of reach of children”; and

iii) “The product shall not be used with any other cleaning product”.

7 Sampling

Sampling shall be done in accordance with Annex D.

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Annex A
(normative)

Determination of acidity

A.1 Accurately weigh 10 g of sample in a 250-mL Erlenmeyer flask and add 25 mL of distilled water. Add approximately 15 mL of 5 % aqueous calcium acetate solution and warm contents to 50 °C. Cool and filter into beaker.

A.2 Carefully rinse the Erlenmeyer flask precipitate with three to four aliquots of distilled water collecting all rinsing with the filtrate. Titrate the filtrate with standard 1 mol/L NaOH solution.

A.3 The acidity, expressed in percent mass by mass, shall be calculated using the formula below:

$$\frac{\text{concentration of NaOH (mol/L)} \times \textit{volume} \text{ of NaOH (mL)} \times C}{\text{mass of sample (g)}}$$

where

C is the constant for acid used such as 3.647 for hydrochloric acid (HCl); 3.132 for phosphoric acid (H_3PO_4) and 0.971 for sulfamic acid (H_3NSO_3).

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Annex B
(normative)

Determination of non-ionic, anionic and cationic surfactant content

B.1 The molar mass and chemical name of all surfactants used shall be supplied by the manufacturer on request by respective Partner States, when use of High-Performance Liquid Chromatography (HPLC) equipment is employed in the determination of surfactant content in the product.

B.2 Accurately weigh about 100 g of the product in a 250-mL Erlenmeyer flask and neutralize it with caustic soda solution to a pH of 8.8 to 7.0.

B.3 Evaporate the resulting solution to dryness at 105 °C. Cool to room temperature and wash the resulting solids with five 20 mL aliquots of chloroform, filtering and collecting each in one tared 300-mL beaker. Evaporate the chloroform and determine the weight of organic solids, (W_1) g.

$$W_1\left(\text{Organic solids}\right)=\frac{\text{mass of solids (g)}}{\text{mass of product (g)}}$$

NOTE Myer's reagent may be used to confirm non-ionic surfactant. Dissolve 100 mg to 150 mg of isolated surfactants in 5 mL of distilled water. Add two drops of Myer's reagent. A yellow precipitate will form if non-ionic surfactant is present.

B.4 Dissolve the organic solids in 50 mL of ethanol and pass resulting solution through a 22 mm x 200 mm x 250 mm chromatographic column of freshly regenerated cationic exchange resin (150 mm to 175 mm mesh). Wash the beaker with four 50 mL aliquots of ethanol collecting them in one tared beaker. (Cationic surfactant, if present, will be retained, the eluate will contain non-ionic and anionic surfactants, if present). Evaporate the alcohol eluate in an oven. Weigh accurately, (W_2).

cationic surfactant, (g) = $W_1 - W_2$

B.5 Dissolve organic solids (W_2), g obtained in B.4 in 50 mL of ethanol and pass the resulting solution through a chromatographic column specified in B.4 but having freshly regenerated anionic exchange resin (150 mm to 175 mm mesh). Wash the beaker with four 50 mL aliquots of alcohol collecting them in one tared beaker. (Anionic surfactant, if present, will be retained, the eluate will contain only non-ionic surfactant). Weigh accurately, W_3, g.

B.6 By difference,

anionic surfactant content, (g) = ($W_2 - W_3$)

surfactant content, percent m/m = $\frac{\left(W_1 - W_2\right) + W_3}{m} \times 100$ or

$$= \frac{W_2}{\text{m}} \text{ x } 100 \text{ \% (anionic cleanser)}$$

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Annex C
(normative)

Method for assessing corrosion potential

C.1 Apparatus

C.1.1 Squat and tall 1-L Pyrex glass beakers

C.1.2 Oven, capable of maintaining 105 °C ± 2 °C

C.1.3 Test panel, made of stainless steel, of approximate dimensions 125 mm x 63 mm x 1.5 mm. The panels shall have a cold-rolled finish on both faces. They shall be undamaged and unmarked, flat and with their edges free from burrs.

C.1.4 Stainless steel tongs, for handling the panels

C.1.5 Panel bolders, made of inert material such as polypropylene for use during pre-cleaning and drying operations

C.1.6 Rubber bands, of rectangular cross-section, measuring when lying flat and unstretched, approximately 80 mm x 6 mm

C.1.7 Magnesium carbonate (technical), for use as an abrasive in cleaning panels

C.1.8 Distilled water

C.1.9 Watch glass, large enough to cover the tall 1-L beakers in C1.1

C.2 Pre-cleaning of test panels and rubber bands

C.2.1 Panels

C.2.1.1 Swab the test panels, two for each test, with cotton wool using a warm 1 % v/v solution of a general purpose detergent.

C.2.1.2 Scour the panels with cotton wool using water as a lubricant and the magnesium carbonate as an abrasive.

NOTE Scouring also removes any films produced by reaction between the detergent and the abrasive, for example, magnesium silicate.

C.2.1.3 Without delay, thoroughly rinse the panels under hot tap water, ensuring that all of the magnesium carbonate is removed.

C.2.1.4 Then, rinse the panels in boiling, distilled water immersing each panel in turn in water contained in three 1-L beakers.

C.2.1.5 Dry in an oven at 105 °C ± 2 °C.

C.2.1.6 Allow to cool in a dry, dust-free position.

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C.2.2 Rubber bands

C.2.2.1 Place the rubber bands in a hard-boiling 1 % v/v solution of a general cleaning detergent for 10 min.

C.2.2.2 Rinse under hot tap water.

C.2.2.3 Then rinse in distilled water and allow to dry.

C.3 Procedure

C.3.1 The procedure shall be carried out in duplicate in accordance with C.3.2 – C.3.9.

C.3.2 In a tall 1-L beaker, make up 950 mL of the use dilution of the product under test. Mark the level of the solution on the side of the beaker.

C.3.3 Place two rubber bands around each test panel in the direction of the long axis of the panel, ensuring that the bands are flat against both sides of the panel and that the panel is not touched by the fingers.

C.3.4 Five minutes after placement of the bands, immerse the panels on their ends as upright as possible in the test solution, so that there is at least 10 mm of solution above the panels. Note the time. Place the watch glasses on the beaker.

C.3.5 Leave the panels in the test solution for 72 h. Each morning and evening, top up the solution to the mark with distilled water.

C.3.6 At the end of the 72 h remove the panels from the test solution, remove the bands and rinse the panels under hot, running water.

C.3.7 Then rinse three times as prescribed in C.2.1.4.

C.3.8 Finally, dry the panels in the oven at 105 °C ± 2 °C.

C.3.9 Examine the panels for:

a) evidence of corrosion, and

b) discolouration.

NOTE Pitting is most likely to occur where the rubber band contacts the edges of the panel.

C.4 Interpretation of results

If the duplicate panels from the test detergents show the same characteristics, record the results. If the duplicates differ, repeat the test using fresh panels.

C.5 Report

The product shall be deemed to contain an effective rust inhibitor if no visible corrosion or discolouration of the panels has occurred.

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Annex D
(normative)

Sampling

D.1 Procedure

D.1.1 In a single consignment, all packages (cartons) containing toilet cleansers 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 D.1.

Table D.1 — Scale of sampling

Number of packages (cartons) in the lot ***N***	Number of packages (cartons) to be selected ***n***	Number of samples
4 - 15	3	3
16 - 40	4	4
41 - 65	5	2
66 - 110	7	2
≥ 111	10	1

D.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 $N \div n$.

D.1.3 From each package thus selected, draw at random an equal number of containers so as to obtain a total volume of at least 2 L.

D.2 Samples for testing

Take at one time all test samples required for the tests in 4.2. Measure the test sample required for determination of free alkali or acid content, and use it immediately.

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Bibliography

EAS 793-1: 2022, *Toilet cleanser — Specification — Part 1: Acidic liquid — Specification*

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