DRAFT TANZANIA STANDARD

TBS/CDC-2(5105) P3 Solid compound for cleaning toilet bowls – Specification. (Revision of TZS 582: 2001)

TANZANIA BUREAU OF STANDARDS

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0 Foreword

This Draft Tanzania Standard is being developed by the Soap and Detergents Technical Committee under supervision of the Chemical Division Standards Committee and it is in accordance with the procedures of the Bureau.

This Draft Tanzania Standard is the first revision of TZS 582: 2001 “Solid compound for cleaning toilet bowls – Specification”.

In the preparation of this Draft Tanzania Standard assistance was drawn from KS 809-1: 2016 Specification for toilet cleansers – Part 1: Powder toilet bowl cleanser; published by the Kenya Bureau of Standards.

In reporting the results of analysis of a test if the final value is to be rounded off, it shall be done in accordance with TZS 4 *Rounding off numerical values*

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Solid compound for cleaning toilet bowls - Specification

1 Scope

1.1 This Draft Tanzania Standard Specifies requirements and test methods for compound for cleaning toilet bowls.
1.2 The material covered by this Draft Tanzania Standard is not intended for use on bathtubs, washstands sink or other metal of enameled fixtures. Also, not to be used with any other cleaning compound especially bleach.

2 Normative reference

The following referenced documents are indispensable for the application of this document. The latest edition of the referenced document (including any amendments) applies.

TZS 1780/EAS 814 *Determination of biodegradability of surfactants — Test method*

3 Requirements

3.1 General

3.1.1 The material shall be a uniform free flowing product consisting mainly of sodium bisulphate crystals or granules and shall be free from foreign matter.

3.1.2 The material shall not be caked in the container when received.

3.2 Specific requirements

The material shall conform to the requirements prescribed in table 1.

Table 1 **- Requirements for a compound for cleaning toilet bowls**

S/No	Parameter	Requirements	Test Method
1.	Acidity (as H_2SO_4), % by mass, min	17.0	annex A
2.	Iron content, % by mass, max	0.15	annex B
3.	Matter Insoluble in water, % by mass, max	5.0	annex C
4.	Particle size		
	i) % retained on 4 000 µm sieve,	0	-
	ii) % retained on 850 µm sieve, min	20	-
	iii) % retained on 250 µm sieve, min	65	-

3.3 Surface active agent

The compound shall contain a surface active agent to accelerate the cleaning action of the product.

The surface active component of the material shall be biodegradable when determined by TZS 1780/EAS 814 The surface tension of a 2 % aqueous solution at 25ºC, shall be not greater than 35 dynes/cm when tested in accordance with annex D.

3.4 Storage properties

The material shall conform to the requirements of this Draft Tanzania Standard for one year from the date of manufacture when stored in its original sealed container and ambient temperatures.

4 Packaging and marking

4.1 Packaging

4.1.1 The material shall be packaged in suitable containers that are securely closed, are impervious to the material or shall not be corroded by the material, are sufficiently strong to prevent leakage and contamination of the products arising from the ordinary risks of transportation, handling and storage.

4.1.2 If the lid is perforated, the holes shall be sealed. It shall be easy to open the holes, which shall be of such a size that the material flows freely through them.

4.2 Marking

4.2.1
Each container shall be legibly and indelibly marked in Kiswahili and English, and other language as agreed between the manufacturer and supplier with the following information:

a) name and address of manufacturer and/or registered trade mark, if any;
b) batch or code number
c) country of origin
d) date of manufacture and expiry;
e) net weight of content in metric units;
f) intended uses-shall be marked with information contained in 1.2. and
g) directions for use.

4.2.3.1 The word **“Caution**” shall be in a colour that contrast with the surrounding for easy of visibility and shall be followed with a statement, **“Read label before use”.**

4.2.3.2 A precautionary notice shall come under the words in 4.2.3.1. with the following information:

a) "**For use only as a toilet bowl cleanser**"

b) It should not be used "in conjunction with any other cleaning material, especially bleach".

c) "Extremely corrosive, avoid contact with eyes, skin and clothing".

d) "First Aid Treatment;
The product contains **Sodium bisulphate. If splashed** in eyes or on skin, flush thoroughly with water, if swallowed give three to four glasses of milk or water. Do not induce vomiting, call physician immediately."

4.2.4 The product shall also be marked with the following cautionary symbols and words:

i) **Poison/danger (sumu/hatari)**; followed by a skull and bones symbol.

ii) **Corrosive (inaunguza)** followed by the symbol.

5 Sampling and testing

The material shall be sampled from the markets, point of manufacture or anywhere else and tested as per the requirements in this specification.

6 Quality of reagents

Unless otherwise specified, reagents used shall be of recognized analytical grade. Distilled water of equal purity shall be used.

Annex A
(Normative)

Determination of acidity

A.1 Acidity (H_2SO_4) – Weigh quickly 10 g ± 0.01 g of the sample. Dissolve and dilute to 500 ml with distilled water. Transfer a 50 ml aliquot portion to a 400 ml beaker, add about 200 ml of distilled water and 2 drops of a 1% phenolphthalein indicator solution. Titrate to a distinct pink end-point with a 0.2mol/l sodium hydroxide solution.

A.2 Calculation

$\%H_2SO_4$ = 0.2 mol/l NaoH x 0.98 x V

$$\%H_2SO_4 = \frac{\text{Molarity of NaOH x MW of } H_2SO_4 \text{ x volume of NaOH}}{100}$$

NOTE – Mass of sodium bisulphate = mass of sulphuric acid x 2.448.

Annex B
(Normative)

Determination of iron content

The iron content may be determined using either of the two methods.

B. Atomic Absorption Spectrophotometer method

Dissolve 1.0g of the sample in 60 ml of water and 20 ml of hydrochloric acid and boil gently for 10 minutes. Cool and dilute to 100 ml. Filter with a medium filter paper No. 540 or equivalent.

Determine the iron content using the Atomic Absorption Spectrophotometer. Express results as % iron by mass.

Annex C
(Normative)

Determination of matter insoluble in water

C.1 General
To determine the matter insoluble in water; the sample is extracted with alcohol, filtered and the residue extracted with hot water.

C.2 Procedure

C.2.1 Starting with a fresh sample of soap, weigh accurately 2 to 10 g of the sample and digest with 200 ml of freshly boiled ethyl alcohol (ethanol) in a covered vessel on a steam-bath until the soap is dissolved. Filter into a flask through a counterpoised filter paper, neutral to phenolphthalein, or sintered crucible with suction, protecting the solution from carbon dioxide and other acid fumes during the operation by covering with a watch glass. Wash it several times with hot ethyl alcohol (ethanol) to remove all the alcohol solubles.

C.2.2 After filtering and washing the residue thoroughly with hot ethyl alcohol, change the receiver, extract the residue with successive portions of distilled water at about 60°C and wash the residue thoroughly on the filter crucible. Dry the filter and the residue at 100°C ± 2°C for 3 hours and cool. Weigh the matter insoluble in water.

C.3 Calculation

Matter insoluble in water, percent by mass = 100 m/m_1

Where

m = mass in g of matter insoluble in water, and
m_1 = mass in g of the material taken for the test.

Annex D
(Normative)

Determination of Surface Tension

D.1 Apparatus

Du Nuoy. Tensimeter or Interfacial Tensimeter or equivalent.

D.2 Method

Prepare 100 ml of distilled water solution of the compound at a concentration specified (2% solution). Determine the surface tension of the solution at 25ºC in accordance with the instructions supplied with the instrument.

D.3 Report

Report the surface tension in dynes per centimeter.

