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DRAFT TANZANIA STANDARD

Heavy duty degreaser — Specification

For Stakeholders Comments Only

TANZANIA BUREAU OF STANDARDS

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Contents

Page

Foreword ..... **vi**

1 Scope **1**

2 Conformance **1**

3 Normative references **2**

4 Terms and definitions **3**

5 Symbols (and abbreviated terms) **3**

6 Clause **4**
6.1 Subclause (level 1) **4**
6.1.1 Subclause (level 2) **4**
6.1.2 Subclause (level 2) **5**
6.2 Subclause (level 1) **5**

7 Clause **5**

8 Special **10**

Annex A (normative) Annex title **11**
A.1 General **11**
A.2 Clause **11**
A.2.1 Subclause (level 1) **11**
A.2.2 Subclause (level 1) **12**
A.3 Clause **12**

Annex B (informative) Which styles correspond to which element — Quick reference guide **13**

Bibliography 16

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Foreword

This Tanzania Standard was published under the authority of the Board of Director of Tanzania Bureau of Standards.

Tanzania Bureau of Standards (TBS) is the statutory national standards body for Tanzania established by the Standards Act Cap. 130.

Tanzania Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. The Technical Committees work under the supervision of Divisional (sectoral) Committees. The Standards are developed in accordance with the Guide and Procedure for Development of Tanzania Standards and TZS 0, Guide for presentation of Tanzania Standards.

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

This Tanzania Standard was developed under the supervision of the Chemical Divisional Standards Committee CDC. The Technical Committee responsible for the standard is CDC 7 Paints and Varnish Technical Committee.

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Heavy duty degreaser — Specification

1 Scope

This Draft Standard specifies requirements, sampling and test methods for alkaline heavy duty degreaser.

This Standard does not apply to hand-cleaning products, personal-care products, laundry detergents, dishwashing detergents or products intended primarily for disinfection or sterilization.

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.

ASTM D4252-89, *Standard Test Methods for Chemical Analysis of Alcohol Ethoxylates and Alkylphenol Ethoxylates*

ASTM G1 25, *Standard Practice for Preparing, Cleaning, and Evaluating Corrosion Test Specimens*

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

ISO 1692, *Sodium and potassium silicates for industrial use — Determination of total alkalinity — Titrimetric method*

TZS 646 ISO 4316, *Surface active agents — Determination of pH of aqueous solutions — Potentiometric method*

ISO 2884-2, *Paints and varnishes — Determination of viscosity using rotational viscometers Part 2: Relative measurement of viscosity using disc or ball spindles at specified speeds*

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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 Electropedia: available at http://www.electropedia.org/

3.1

degreaser

product formulated to remove oils, grease, lubricants, fats, petroleum residues and other oily contaminants from hard surfaces example workshop floors, Engines surfaces, kitchen hoods and ovens

4 Requirements

4.1 General requirement

5.1.1 The degreaser shall be soluble in water

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5.1.2 The degreaser shall be Non-Flammable, homogeneous liquid, free from visible foreign matter, and sediment.

5.1.3 The degreaser shall be environmentally safe.

4.2 Specific requirements

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

Table 1 specific requirements of Heavy duty degreaser

S/N	Parameter	Requirement	Test Method
i.	Total free alkali, (as NaOH), % w/w, min	150	ISO 456
ii.	Total alkalinity, % w/w, min	1000	ISO 1692
iii.	Water-insoluble matter content, g/L, max	1.0	Annex A
iv.	Total surfactants % w/ w, min	10.0	ASTM D4252-89
v.	pH at room temperature	10.5 - 14.0	TZS 646
vi.	Corrosion tendency	To pass the test	ASTM G1 25
vii.	Thermal stability	To pass the test	TZS 2127-18
viii.	Cleaning efficiency	To pass the test	Annex B
ix.	[a] Viscosity at 25 °C, mPa.s, max	1800-2100	ISO 2884-2
[a] The viscosity of undiluted sample			

5 Packaging

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

6 Labelling

Each package shall be legibly and indelibly labelled in English and/or Kiswahili with the following information:

a) name of the product as “heavy duty degreaser”
b) manufacturer's name and physical address;
c) net content;
d) batch or lot number;
e) date of manufacture
f) best before date or expiry date
g) instructions for use,
h) storage and disposal instructions
i) cautionary words and symbols:

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8 Sampling

Sampling shall be done in accordance with *Annex C*.

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Annex A
(normative)

Determination of insoluble matter

A.1 Principle

A known mass of sample is diluted and filtered. The residues are then dried to constant mass.

A.2 Procedure

A.2.1 Weigh, to the nearest (to ±0.001 g) approximately 5 g of the test sample, into a 400 ml beaker and add 200 ml of distilled water. Heat on a steam bath, with frequent stirring, until the sample is completely dispersed.

A.2.2 Filter the solution immediately, under suction, through a previously dried and tared sintered glass crucible of porosity 2. Ensure that the insoluble matter is quantitatively transferred to the filter.

A.2.3 Wash the beaker and the residue in the crucible five times with 40 ml of hot distilled water.

A.2.4 Allow the wash solution to drain completely and dry the crucible to constant mass at 105 ± 2 °C in an air oven.

A.2.5 Calculation

The insoluble matter content S is given, as a percentage by mass, by the formula

$$\frac{M4 - M2}{M1} x100$$

where,

M_1 is the mass, in grams, of the test sample;

M_2 is the mass in grams of the sintered glass crucible;

M_4 is the mass, in grams, of the sintered glass crucible and the residue after drying.

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Annex B
(normative)

Determination of cleaning efficiency

B.1 Apparatus

B.1.1 **Six glass petri dishes** of diameter 96 mm ± 2 mm and depth of 11 mm ± 2 mm.

B.1.2 **Oven**, capable of reaching 245 °C.

B.2 Materials

Grease or Fuel oil or Cooking oil

B.3 Procedure

B.3.1 Apply 0.8 g ± 0.02 g of the Grease or Fuel oil or Cooking oil evenly to the bottom of each of the six petri dishes by means of a small, soft brush.

B.3.2 Place the dishes in an oven that has been heated to approximately 245 °C Close the oven and maintain it at 245 °C ± 5 °C for 2 h. Remove the dishes from the oven and allow them to cool to room temperature.

B.3.3 Place the prepared glasses for approximately 30 min in an oven maintained at 80.0 °C ± 2 °C.

B.3.4 Measure a 50-mL portion of the relevant standard oven cleaner (see A.2.2 and A.2.3) into each of three glass beakers and a 50-mL portion of the undiluted test specimen into each of three other glass beakers.

B.3.5 Without removing the dishes from the oven, pour into each of three dishes one of the 50-mL portions of standard oven cleaner, and into each of the remaining three dishes, one of the 50-mL portions of the test specimen.

B.3.6 In the case of a Type 3 test specimen and standard oven cleaner, cover each filled dish with a watch-glass.

B.3.7 Close the oven door and maintain the oven at 80 °C ± 2.0 °C for a period (started when the oven door is closed) of 30 min in the case of a Type 1 or Type 2 test specimen and standard oven cleaner, and 45 min in the case of a Type 3 test specimen and standard oven cleaner.

B.3.8 Remove the dishes from the oven, decant the cleaning fluids and carefully rinse the dishes under very slow running tap water at ambient temperature.

B.3.9 Visually compare the dishes cleaned with the test specimen and those cleaned with the degreaser for compliance with cleaning efficiency requirement.

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Annex C
(normative)

Sampling

C.1 Procedure

C.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

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 containers so as to obtain a total volume of at least 2 L.

C.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.

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