



**EDICT**



# **OF GOVERNMENT**

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EAS 31 (2011) (English): Laundry soap specification



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# **EAST AFRICAN STANDARD**

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**Laundry soap — Specification**

**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 East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to achieve this objective, the Partner States in the Community through their National Bureaux of Standards, have established an East African Standards Committee.

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.

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**It is important that users of East African Standards ascertain that they are in possession of the latest amendments or latest editions**

The following table will assist the user to update the standard

### **AMENDMENTS**

Clause	Amendment No	Date of issue	Text affected

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## Introduction

The African countries produce a variety of vegetable oils, which are the basic materials for soap manufacture. Hence there is the potential for production of soaps on the continent. Soap production in Africa is by both the formal (organized large scale) and informal (unorganized small scale) producers. Consequently, many different types and grades of soaps are produced.

This EAS defines one type of soap, that is laundry soap, which is widely used on the continent. It establishes three different grades of laundry soap based on the total fatty matter content and addition of builders and fillers to the soap. This standard will enable the purchaser to define his requirements with precision by referring to the grade and designation given in this East African Standard.

## Laundry soap — Specification

### 1 Scope

This East African Standard specifies requirements for two grades of laundry soaps in the form of cakes, tablets or bars, produced from vegetable or animal oils or fats or a blend of all or part to these materials. It does not cover liquid soap for household purposes, and bar soap, in which synthetic detergents have been added to enhance its performance.

### 2 Normative references

ISO 456 *Surface-active agents – Determination of free caustic alkali*

ISO 457 *Analysis of Soap – Determination of chloride content*

ISO 673 *Analysis of Soap – Determination of ethanol insoluble matter*

ISO 672 *Analysis of Soap – Determination of moisture and volatile matter content*

ISO 684 *Analysis of Soap – Determination of total free alkali*

ISO 685 *Analysis of Soap – Determination of total alkali content and total fatty matter content*

ISO 862: Surface active agents - Vocabulary

ISO 1067 *Analysis of Soap – Determination of unsaponifiable, unsaponified, and unsaponified saponifiable matter*

### 2 Terms and definitions

For the purpose of this standard, terms and definitions specified under ISO 862 and the following shall apply:

#### 2.1

##### **builder**

a complementary component of soap, usually inorganic, which with reference to the washing action, adds its characteristic properties to those of the essential constituents

NOTE: Builders are added to a soap to improve its effectiveness under the conditions of use. The action of builders is mostly physico-chemical and comprises a series of effects, which results in more economic usage and better cleansing action of soap especially in hard water areas. Substances commonly used as builders are soda ash, sodium silicates, sodium phosphates, borax and cellulose derivatives

#### 2.2

##### **built laundry soap**

a grade II laundry soap containing moderate quantities of builders (see table 1).

#### 2.3.

##### **colouring matter**

Any dyestuff that may be used to colour laundry soap.

#### 2.3

##### **fillers**

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materials added to soaps to increase the mass of the product but which in themselves do not improve effectiveness of the soap under the conditions of use.

Note: Fillers are generally inert and of an almost or completely non-detergent character.

## 2.4

### **free caustic alkali**

the quantity of hydroxyl ion, reported as sodium hydroxide (NaOH) for sodium soaps or potassium hydroxide (KOH) for potassium soaps, which is found in solution after precipitation with barium chloride under the operating conditions described.

## 2.5

### **laundry soap**

A soap, which is intended for use in washing clothes.

NOTE Laundry soap may contain fillers, builders, colouring matter, perfume, optical brighteners, preservatives, glycerin or oparifiers.

## 2.6

### **lot**

an identified quantity of laundry soap produced under essentially the same conditions.

## 2.7

### **total fatty matter**

water-insoluble fatty material obtained by decomposing the soap with a mineral acid under the conditions specified. This term includes unsaponified matter, glycerides and any rosin acids contained in the soap, in addition to the fatty acids.

## 2.8

### **total Free Alkali**

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

The results are generally expressed as a percentage by mass as either sodium hydroxide (NaOH) for sodium soaps or potassium hydroxide (KOH) for potassium soaps.

They may also be expressed in milliequivalents per gramme.

## 2.9

### **saponification**

a chemical reaction permitting the separation of an ester into its constituent parts, acid and alcohol, or possibly phenol, by the action of a base, with the formation of a salt from the acid

NOTE: Saponification of fats produces soap.

## 3 Grades of laundry soap

Laundry soap shall be of the following grades and designations:

- a) Pure laundry soap, Grade I
- b) Built/filled laundry soap, Grade II

## 4 General requirements

### 4.1 Appearance

*Laundry soap shall be free from visible dirt and other foreign matter.*



## 4.2 Texture and stability

Laundry soap shall be of firm texture and possess good lathering and cleaning properties.

## 4.3 Odour

Laundry soap shall be free from objectionable odour. It shall not leave objectionable odour on clothes after washing and thoroughly rinsing with water.

## 4.4 Colouring matter

When coloured laundry soap is used in washing any white fabric, it shall not leave any visible stains on the fabrics after washing and thorough rinsing with water when tested in accordance with Annex A

## 4.5 Stability

When immersed in distilled water for one hour at 25 – 30 °C, laundry soap shall not disintegrate, and when dried at room temperature for 25 h thereafter, it shall not crumble, crack or break.

## 4.6 Toxicity

The product shall be not injurious to health, cause irritation to the skin during use or handling, damage the fabrics and be environmentally friendly/safe.

## 4.7 Chemical requirements

Laundry soap shall comply with the requirements in Table 1.

# 5 Sampling

Samples shall be drawn at random from lots.

# 6 Methods of test

**6.1** Samples of laundry soap shall be tested in accordance with the methods of test referred to in 4.5 and Table 1.

**6.2** Before testing, reduce the sample taken in clause 6 to a final sample by cutting each bar or cake of soap into eight parts by three mutually perpendicular cuts passing through the middle of each face.

**Table 1 — Chemical requirements for laundry soap**

Characteristics	Requirements % (m/m)			Methods of test
	Pure laundry soap Grade I	Built/filled laundry soap Grade II		
Total fatty matter, %, min	62	50		ISO 685
Matter insoluble in water, % max.	0.5	5		TZ to provide the test method
Matter insoluble in ethanol, max.	2.5	20		ISO 673
Free caustic alkali, as NaOH, max.	0.2	0.2		ISO 456
Total free alkali, as NaOH, max.	0.2	0.3		ISO 684
Total free fat (unsaponified and unsaponifiable fatty matter), max.	0.2	0.6		ISO 1067

Moisture and volatile matter content at 105 °C, max.	30	30		ISO 672
Chloride content, as NaCl, max.	1.5	1.5		ISO 457
Staining	Shall pass the test			Annex A

Take two diagonally opposite eights and, if the final sample so obtained exceeds 500 g, divide each eighth into two equal parts. Slice, grate finely or pass through a mechanical grinder, mix thoroughly and store in a completely filled container.

## **7 Compliance with the standard**

The lot shall be deemed to comply with this standard, if after inspection and testing, it complies with the requirements specified in clause 4.

## **8 Packing and marking**

### **8.1 Packing**

Laundry soap shall be packed in clean, sound and dry containers made of a material, which does not affect the product and which protects the product from excessive loss of moisture and from contamination.

### **8.2 Marking**

#### **8.2.1 Packaging**

Each package shall be marked legibly and indelibly with the following particulars:

- i) The words 'Grade I Laundry Soap' or Grade II Laundry Soap'.
- ii) The name and address of the manufacturer and/or trade mark if any.
- iii) Nominal weight of each bar or cake at the time of packaging.
- iv) Number of bars or cakes contained in the package.
- v) Country of origin

#### **8.2.2 Wrapper**

On the paper or wrapper in which the bar or cake is wrapped shall be marked with the particulars contained in 10.2.1 (i) to (ii).

#### **8.2.3 Bars or cakes**

In case of bars or cakes which are not wrapped in individual wrapper, the bars or cakes shall be marked with brand names or trademarks and the grade of the soap, and Grade I or Grade II.

## **9 Sampling and inspection**

### **9.1 Lot and Batch**

#### **9.1.1 Batch**

The soap is from one vat or pan. In the continuous production process, the soap from one day's production shall constitute a batch.

#### **9.1.2 Lot**

In a single consignment, all packages containing laundry soap bars or cakes drawn from the same batch of production shall constitute a lot.

### **9.2 Sampling**

**9.2.1** 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 and product units from each container respectively to be selected for drawing the sample shall be in accordance with Table 2.

Number of packages (cartons) in the lot N	Number of containers (cartons) to be selected n	Number of product units to be selected from each container
4 – 15	3	3
16 – 40	4	4
41 – 65	5	2
66 – 110	7	2
111 and above	10	1

**9.2.2** The packages (cartons) 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  $N \div n$ .

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.

**9.2.3** *Inspection* - Inspect the cakes selected for compliance with the requirements specified under table1 and performance requirements

**Annex A**  
**(Normative)**

**Determination of staining test of laundry bar soap**

Two methods are for staining are described.

**A.1 Method 1: Undissolved Powder (5.0 % Product concentration)**

**A.1.1 Principle**

Test pieces of cloth of defined area are rubbed with soap and then dipped in water overnight then scrubbed and rinsed in running water.

**A.1.2 Materials**

Pieces of white cotton, nylon and Crimplene C cloth.

**A.1.3 Procedure**

NOTE: The staining test is conducted in triplicate for all cloth types.

**A.1.3.1** Rub evenly about 10 g of soap over a 15 cm x 7.5 cm test swatch placed on a china plate.

**A.1.3.2** Pour gently 50 ml of hot water (approximately 55 °C) into the plate so that the test swatch is covered and left overnight (16 h).

**A.1.3.3** Hand rub the swatch 10 times and then rinse each of the three test swatches are rinsed twice in about 2 litres of water and then dried in the drier.

**A.2 Method 2: Pre-dissolved Soap (2.5 % Product concentration)**

**A.2.1 Principle**

The method involves subjecting fabrics to prolonged soaking in a highly concentrated soap solution.

**A.2.2 Materials**

Pieces of white cotton, nylon and Crimplene C cloth of dimension 15 cm x 7.5 cm

**A.2.3 Procedure**

NOTE: The staining test should be conducted in triplicate for all cloth types.

**A.2.3.1** Weight 10 g of soap in a honey jar and then add 200 ml of hot water at a temperature of approximately 60 °C, shake until when the soap is thoroughly dissolved.

**A.2.3.2** Place a test swatch A 15 cm x 7.5 cm in the soap solution (B.2.3.1) and allow to stand overnight.

**A.2.3.3** Transfer the test swatch in a bowl containing 1 litre of water and then agitate vigorously by hand for 10 s.

**A.2.3.4** Rinse the test swatches in 5 litres of water by hand. The times should be fixed for all washes, and then dry swatches.

