



## DRAFT TANZANIA STANDARD

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### Cosmetics and toiletries products — Methods of sampling

Draft Standard for Comment Only

TANZANIA BUREAU OF STANDARDS

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## **TBS/CDC 3(4243) CD2**

### **Foreword**

This Draft Tanzania Standard was prepared by the Cosmetics and Creameries Technical Committee, under the supervision of Chemicals Divisional Standards Committee and it is in accordance with the procedures of the Bureau.

This Draft Tanzania Standard is intended to facilitate the introduction of uniform methods for sampling cosmetics and toiletries products. It is hoped that the standard will bring about a closer understanding between the cosmetics and toiletries product industry on the one hand and the various purchasing agencies and testing laboratories in the country on the other.

This second edition cancels and replaces the first edition TZS 314:2017 with editorial and structural changes.

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## Cosmetics and toiletries products — Methods of sampling

### 1. Scope

This Draft Tanzania Standard prescribes methods of sampling cosmetics and toiletries products. For any inconsistency that exists between the requirements of this Tanzania Standard and the Tanzania Standard for an individual material, the latter shall prevail.

### 2. Normative reference

The following referenced documents are indispensable for the application of this Tanzania Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

TZS 2126/EAS 846, *Glossary of terms relating to the cosmetic industry*

### 3. Terms and definitions

For the purposes of this document, the terms and definitions given in TZS 2126 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 Electropedia: available at <http://www.electropedia.org/>

#### 3.1

##### **acceptable quality level**

designated value of percent defective items that will be accepted most of the time (approximately 5 to 100) by operation of the sampling plan

#### 3.2

##### **composite sample**

sample prepared by mixing equal quantities of material from each of the gross samples in a lot, and intended to represent the lot as a whole fully

#### 3.3

##### **cosmetics and toiletries products**

articles intended to be rubbed, poured, sprinkled, or sprayed on, or introduced into, or otherwise applied to the human body or any part thereof for cleansing, beautifying, promoting attractiveness, or altering the appearance, and includes any article intended for use as a component of a cosmetic

#### 3.4

##### **gross sample**

sample prepared by mixing the part or whole of the material from some or all of the units in a package, and intended to fully represent the package

#### 3.5

##### **individual sample**

sample obtained from a gross sample representing a package and intended for determining the specified characteristic of the material in the package

### **3.6 sample**

portion of a material selected in such a way that it represents all the characteristics of the material from which it is taken

### **3.7**

#### **sampling procedure**

succession of steps set out in this Draft Tanzania Standard to ensure that the sample possesses the essential characteristics of the bulk

### **3.8**

#### **test sample**

smaller sample prepared in a specified manner by subdivision of the gross sample. It has the essential characteristics of the gross sample

## **4 General requirements of sampling**

In the drawing, preparing, storing and handling samples, the following precautions and directions shall be observed:

**4.1** Samples shall be taken in a protected place not exposed to damp air, dust or soot.

**4.2** The sampling instrument shall be clean and dry.

**4.3** The samples, the material being sampled, the sampling instrument and the containers for samples shall be protected from adventitious contamination.

**4.4** The samples shall be placed in a suitable clean dry container. The sample containers shall be of a size such that they are almost completely filled by the sample.

**4.5** Each container shall be sealed air-tight after filling and marked with full details of sampling batch or code number, name of manufacturer, and other important particulars of the consignment.

**4.6** The samples shall be stored in such a manner that the temperature of the material does not vary unduly from the normal temperature of that material and they are protected from light.

**4.7** Sampling shall be done by a person agreed to between the purchaser and the supplier and in the presence of the purchaser or their representative and the supplier or their representative.

## **5 Classification**

For the purpose of this draft Tanzania Standard, cosmetics and toiletries products shall be classified under three main groups namely solids, semi-solids and liquids. They will be further subdivided as indicated in Table 1.

**Table 1 – Classification of cosmetics and toiletries goods**

Main group	Sub-group	Typical examples
Solids	Powders, Sticks or cakes	Skin powders, face powders, hair dyes, lipsticks
Semi- solids	Thick emulsions, Pastes (solid/liquid – dispersions)	Face creams, hair creams, liquids make-ups, shaving creams
Liquids	Homogenous liquids	After shave lotions, eye lotions, hair oils and tonics, liquid brilliantine, shampoos, and perfumes
	Liquid emulsions	Face and hand lotions, hair darkeners, and dressings.

## 6 Sampling

### 6.1 General

The sampling procedure at the point of manufacture shall consist essentially in drawing samples of the finished product from the top, middle, and bottom portions of the process vessel immediately before packing.

### 6.2 Lot

The material in a single mass obtained from the same raw materials and process of manufacture before packing shall be regarded as one lot. For instance, the material in a process vessel just before packing may be taken as constituting a lot.

### 6.3 Scale of sampling

In case of solid units such as sticks and cakes, at least three units shall be selected at random. In case of non-solids, at least three samples shall be drawn using appropriate sampling instruments, preferably taking the same number of samples from the top, middle, and bottom portions of the lot.

### 6.4 Sampling instruments

Instruments of the type described below may be used for drawing samples of different cosmetics and toiletries products.

#### 6.4.1 *For powders*

For drawing samples of powders, a sampling tube, commonly known as a “thief”, shall be used. This usually consists of two closely fitting concentric tubes with matching slots that are closed by rotating the tubes with respect to each other. The ‘thief’ with the slots closed is inserted to the desired depth in a given process vessel. The slots are then opened, and the material flows through the open slots to fill the tube. The slots are then closed and the ‘thief’ withdrawn.

#### 6.4.2 *For thick emulsions, pastes, and gels*

For drawing samples of these products, a sampling instrument similar to that described under 6.4.1 may be used. However, the top end of the sampling tube should be connected to a suction device.

#### 6.4.3 *For homogenous liquids and thin emulsions*

For drawing samples of these products, a simple device may be used, consisting of a small bottle and a two-hole stopper, one hole being fitted with a short glass tube and the other with a glass tube slightly longer than the depth of the vessel. To the longer tube is attached a stop-cock which is kept closed while the bottle is lowered to the desired depth in a given process vessel. The stop-cock is then opened and as the air escapes through the longer tube, the product enters the bottle and fills it.

An alternative sampling device consists of a tube fitted with a stopper at the lower end which can be closed by means of an attached rod that extends above the upper end of the tube. With the stopper disengaged, the tube is lowered slowly into the vessel so that the liquid enters it with minimum disturbance. When the bottom of the vessel has been reached the lower end of the tube is closed with the stopper, and the tube is removed.

## 6.5 Preparation of samples

**6.5.1** The material of all the samples drawn from the lot according to 6.3 shall be disintegrated, if necessary, and mixed thoroughly to give the composite sample at the point of manufacture. The material so chosen shall be in a quantity about 3 times the material required for carrying out a complete series for all the requirements of the specification.

**6.5.2** The composite sample obtained in 6.5 shall be examined for all the requirements of the specification. If it satisfies all the requirements, it shall be passed on for packing, otherwise not.

## 6.6 Sampling of packages

### 6.6.1 General

The sampling procedure for packages shall consist of selecting and drawing a sufficient number of unit packs.

### 6.6.2 Lot

In a single consignment, all the packages containing cosmetics and toiletries products of the same type and form representing the same batch of manufacturer, shall constitute a lot. If the consignment consists of packages containing cosmetics and toiletries products of different types of forms or batches of manufacturers, then the packages containing products of the same type, form, and batch of manufacturer shall be grouped; each group shall constitute a separate lot.

### 6.6.3 Scale of sampling

For ascertaining the conformity of a lot to the requirements prescribed in the specifications, for individual cosmetics and toiletries products, tests shall be carried out on each lot separately. The number ( $n$ ) of packages to be selected for drawing the samples shall depend on the size ( $N$ ) of the lot in accordance with Table 2.

**Table 2 – Scale of sampling for packages**

Number of packages in the lot ( $N$ )	Number of packages to be selected ( $n$ )
3 to 50	3
51 to 200	4
201 to 400	5
401 to 650	6
651 and above	7

The packages shall be selected at random and to ensure randomness of a selection, random number tables shall be used. In case such tables are not available, the following procedure may be adopted: Starting from any package, count all the packages in order as 1, 2, 3, up to  $r$  and so on, where  $r$  is the integral part of  $N/n$ . Every  $r^{\text{th}}$  package thus counted shall be withdrawn to give a sample for purposes of test.

### 6.6.4 Gross samples

#### 6.6.4.1 For powders

From each of the packages selected in 6.6.3, draw at random one more container. The material in the containers so chosen from the package shall be about three times the quantity required for carrying out a complete series of tests for all the requirements of the specification. It shall be disintegrated, if necessary, and mixed thoroughly to give a gross sample.

#### **6.6.4.2** *For sticks and cakes*

From each of the packages selected in 6.6.3, draw at random one or more sticks or cakes. The material so chosen from each package shall be about three times the requirements of the specification. It shall be disintegrated in a suitable chopper and, after discarding the first and last chippings the material shall be mixed thoroughly to give a gross sample.

#### **6.6.4.3** *For thick emulsions, pastes and gels*

From each of the packages selected in 6.6.3, draw at random a suitable number of containers and, with the help of a suitable sampling device, withdraw the material for the preparation of a gross sample. A simple device for withdrawing semi-solid products from jars consists of a glass tube about 1 cm in diameter and fitted with a piston. The piston is pulled out and the tube pressed into the semi-solid product; the tube is then withdrawn, and the sample is ejected from it with the help of the piston. The material so drawn from each package shall be about three times the quantity required to carry out a series of tests for all the requirements of the specification. It shall be mixed thoroughly to give a gross sample.

#### **6.6.5** *For homogenous liquids and thin emulsions*

From each of the packages selected in 6.6.3, draw at random a suitable number of containers, shake them thoroughly to ensure homogeneity of the contents and draw samples with the aid of a suitable instrument. The material so drawn from each package shall be about three times the quantity required for carrying out a complete series of tests for all the requirements of the specification. It shall be mixed thoroughly to give a gross sample.

NOTE – In the case of liquid preparations containing alcohol or other volatile ingredients, great care is necessary to ensure that there is no loss on evaporation with resulting change in product make up.

### **6.7 Composite and individual samples**

#### **6.7.4** *Composite sample*

Segregate carefully the gross samples obtained from a lot according to 6.6.3 and 6.6.4. From each of the gross samples drawn from the same lot take a small but equal portion of material. Mix all these small portions thoroughly into a composite mass which should be of a size sufficient to carry out triplicate testing for all the characteristics specified under 6.8.5. This composite mass representing the lot shall be divided into three equal parts, each forming a composite sample; one for the purchaser, another for the supplier and the third as the referee sample to be used in case of dispute between the purchaser and the supplier.

#### **6.7.5** *Individual samples*

The remaining portion of material in each gross sample shall be divided into three equal parts, each forming an individual sample. One set of individual samples shall be for the purchaser, another for the supplier and the third as a referee sample to be used in case of dispute between the purchaser and the supplier.

**6.7.6** All the composite and individual samples shall be transferred to separate containers. These containers shall then be sealed air-tight with stoppers, and labelled with full particulars of identification.

### 6.7.7 Referee samples

The referee samples shall consist of a composite and a set of individual samples. All the containers of referee samples shall bear the seals of both purchaser and supplier and shall be kept at a place agreed to between the two parts.

## 6.8 Number of tests

**6.8.4** Tests for the determination of important characteristics, as specified in relevant Standards for the individual materials, shall be conducted separately in each of the individual samples.

**6.8.5** Tests for the determination of the other characteristics prescribed shall be conducted on the composite sample.

## 6.9 Criteria for conformity

### 6.9.4 For individual samples

For each of the characteristics that have been determined on the individual samples, the mean  $\bar{X}$  and range  $R$  of test results shall be calculated as follows:

$$\text{Mean } (\bar{X}) = \frac{\text{The sum of test results}}{\text{Number of test results}}$$

Range ( $R$ ) = the difference between the maximum and minimum value of the test results.

**6.9.5** If the specification limit for the characteristic is given as a minimum, then the value of the expression  $(\bar{X} - KR)$  shall be calculated from the relevant test results (see 6.9.8). If the value so obtained is greater than or equal to the minimum limit, the lot shall be declared as conforming to the requirement for that characteristic.

**6.9.6** If the specification limit for the characteristic is given as a maximum, then the value of the expression  $(\bar{X} + KR)$  shall be calculated from the relevant test results (see 6.9.8). If the value so obtained is less than or equal to the maximum limit, the lot shall be declared as conforming to the requirement for that characteristic.

**6.9.7** If the characteristic has a two-sided specification limit, then the values of the expression  $(\bar{X} \pm KR)$  shall be calculated from the relevant test results (see 6.9.8), If the value so obtained lie between two specification limits, the lot shall be declared as conforming to the requirement for that characteristic.

**6.9.8** The value of the factor  $K$  referred to in 6.9.5 to 6.9.7 shall be chosen in accordance with table 3 depending upon the acceptance quality level.

**Table 3 – Values of  $K$  for different acceptable quality levels**

Acceptable quality level	Value of $K$
Up to 1 percent	0.6
Over 1 % and up to 2 %	0.5
Over 2 % and up to 4 %	0.4

### 6.9.9 For composite sample

For declaring the conformity of the lot to the requirements of all the remaining characteristics determined on the composite sample, the test result for each of the characteristics shall satisfy the relevant requirement specified in the Standard on the subject.

## **Bibliography**

TZS 317:2017 Cosmetics and toiletries products — Methods of sampling

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