



DEAS 340: 2021

ICS 71.100.70

## DRAFT EAST AFRICAN STANDARD

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Nail polish — 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 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 070, *Cosmetics and related products*.

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

This third edition cancels and replaces the second edition (EAS 340:2020), which has been technically revised.

## Nail polish — Specification

### 1 Scope

This Draft East African Standard specifies the requirements, sampling and test methods for nail polishes used for cosmetic purposes.

This standard does not cover nail gels

### 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.

EAS 346, *Labelling of cosmetics — General requirements*

EAS 377 (all parts), *Cosmetics and cosmetic products*

EAS 846 Glossary of terms relating to cosmetic industry

EAS 847-16, *Cosmetics — Analytical methods — Part 16: Determination of lead, mercury and arsenic content*

ISO 24153, *Random sampling and randomization procedures*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EAS 846 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>

### 4 Requirements

#### 4.1 General requirements

- 4.1.1 All ingredients used including dyes, pigments and colours shall comply with all parts of EAS 377.
- 4.1.2 Nail polish shall not leave any unacceptable stain on the nails after being removed with the aid of an effective nail polish remover.
- 4.1.3 Nail polish shall be glossy on the nails after complete drying when seen visually.
- 4.1.4 The resins and solvents used shall have no undesirable or harmful effects on the nails for example, cracking.

4.1.5 Nail polish may be coloured, colourless or pearlescent and may contain natural or artificial pearl essence.

## 42 Specific requirements

The nail polish shall comply with the specific requirements given in Table 1 when tested according to the methods prescribed therein.

**Table 1 — Specific requirements for nail polish**

S.No	Characteristic	Requirement	Test method
i.	Non-volatile matter, % by mass, min.	20	Annex A
ii.	Drying time in minutes, max.	6	Annex B
iii.	Adhesion test	To pass the test	Annex C
iv.	Scratch test	To pass the test	Annex D
v.	Blush Test	To pass the test	Annex E

## 4.3 Heavy metal contaminants

The products shall comply with the limits for heavy metal contaminants in accordance with Table 2.

**Table 2 — Limits for heavy metal contaminants**

S No.	Characteristic	Limits, mg/kg, max	Method of test
i.	Lead	10	EAS 847-16
ii.	Arsenic	2	
iii.	Mercury	2	
NOTE The total amount of heavy metals as lead, mercury and arsenic, in combination, in the finished product should not exceed 10 mg/kg.			

## 5 Packaging

5.1 The product shall be packaged in suitable airtight well-sealed containers that shall protect the contents and shall not cause any contamination or react with the product.

5.2 The cap of the container shall carry a brush to apply the polish on the nail.

## 6 Labelling

6.1 In addition, to the labelling requirements given in EAS 346, each package shall be legibly and indelibly marked with the product name as "nail polish".

6.2 Where the size, shape or nature of container/package does not permit all the information above to be displayed, leaflets, hand tags, display panels, shrink wrap and the like shall be used.

## 7 Sampling

Sampling shall be carried in accordance with ISO 24153.

## Annex A (normative)

### Determination of non-volatile matter

#### A.1 Apparatus

Flat glass petri-dish, 8 cm diameter

#### A.2 Procedure

Weigh accurately  $1.0 \text{ g} \pm 0.2 \text{ g}$  of the polish in the petri dish and place it in an oven at  $105 \text{ }^\circ\text{C} \pm 2 \text{ }^\circ\text{C}$  for one hour. Cool to room temperature and weigh the dish. Repeat the process to bring to constant mass.

#### A.3 Calculation

The non-volatile matter content shall be calculated as follows;

$$\text{Non-volatile matter, percent by mass} = \frac{M_2 - M_1 \times 100}{M}$$

where

$M$  is the, mass in grams, of the sample taken,

$M_1$  is the mass, in grams, of the dry and empty petri dish, and

$M_2$  is the mass, in grams, of the petri dish and dried sample



## **Annex B** (normative)

### **Determination of drying time**

#### **B.1 Apparatus**

**B.1.1 Microscopic glass slide**

**B.1.2 Oven**

#### **B.2 Procedure**

Clean the glass slide with toluene or xylene. Place the slide in an oven maintained at  $37\text{ °C} \pm 1\text{ °C}$  for 10 min. Remove the slide from the oven, and spread one drop of the nail polish on an area of 1 cm x 2.5 cm on it. Place the slide in the oven for 6 min. On removal, touch the film with the fingertip. The polish shall be taken to have passed the test if no nail polish material is left on the fingertip.

## **Annex C** (normative)

### **Adhesion test**

#### **C.1 Apparatus**

**C.1.1 Microscopic glass slide**

**C.1.2 Pressure sensitive cellophane adhesive tape**

#### **C.2 Procedure**

Make a film of 1 cm x 2.5 cm area on the glass slide, cleaned with toluene or xylene, taking one drop and spreading it with a nail polish brush. Place the slide in a horizontal position and allow it to dry at room temperature for 24 h. After drying, press the cello tape over the film so as to cover the entire film. Pull the tape off the film immediately. The polish shall be taken to have passed the test if the film does not peel off at all.

## **Annex D** **(normative)**

### **Scratch test**

#### **D.1 Principle of the method**

It is a measure of the resistance of the dried film against a scratch, under a specified load.

#### **D.2 Apparatus**

**D.2.1 Stainless steel spatula**, 15 cm x 2.5 cm

**D.2.2 Scratch test apparatus**, with the end of the hard steel needle being hemispherical and 1 mm in diameter

#### **D.3 Procedure**

Apply nail polish over the clean and dry plate, allow it to spread evenly and keep it inclined for 24 h at room temperature so that uniform dry film is produced. After the film dries, place the apparatus. Fix the needle at the end of the counterpoise, keeping it horizontal by adjusting the length of the needle. Slowly draw the base holding the spatula. Subject the needle to a load of 200 g and draw along the full length of the film. The material shall be considered to have passed the test if the needle does not scratch through the film of polish.

## **Annex E** **(normative)**

### **Blush test**

#### **E.1 Apparatus**

**E.1.1 Tinplate**, 5 cm x 15 cm

**E.1.2 Beaker**, 250 mL capacity

#### **E.2 Procedure**

Apply a thin film of nail polish over the plate and allow it to spread into a uniform film. Drain the excess. Dry the plate over 24 h at ambient conditions. Fill a beaker to half its level with ordinary tap water. Dip the plate in water in the beaker such that half the coating is in water and the remaining portion above water. Let it stand for 4 h. Remove the plate, dry it with tissue paper. Allow it to further dry at ambient conditions for 4 h. Check for blush. The material can be taken to have passed if it has no slight whitishness. The film should not show any blistering or peeling off.

## Bibliography

EAS 340: 2013, *Nail polish — Specification*

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