



**DEAS 847-9: 2025**

ICS 71.100.70

## **DRAFT EAST AFRICAN STANDARD**

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**Cosmetics — Analytical methods — Part 9: Determination of colour**

**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 071, *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 second edition cancels and replaces the first edition (EAS 847-9:2017), which has been technically revised.

EAS 847 consists of the following parts, under the general title *Cosmetics — Analytical methods*:

- *Part 1: Glossary of terms*
- *Part 2: Determination of moisture content and volatile matter content*
- *Part 3: Determination of insoluble impurities*
- *Part 4: Determination of acid value and free fatty acids*
- *Part 5: Determination of unsaponifiable matter*
- *Part 6: Determination of melting point*
- *Part 7: Determination of specific gravity*
- *Part 8: Titre test*
- *Part 9: Determination of colour*
- *Part 10: Determination of acetyl value and hydroxyl value*
- *Part 11: Determination of allyl isothiocyanate*
- *Part 12: Determination of flash point by Pensky – Martens Closed Cap Tester*
- *Part 13: Determination of rancidity*

- *Part 14: Determination of Polenske value*
- *Part 15: Determination of ash content*
- *Part 16: Determination of lead, mercury and arsenic content*
- *Part 17: Determination of pH*
- *Part 18: Determination of thermal stability*
- *Part 19: Determination of non-ionic, anionic and cationic surfactant content*
- *Part 20: Determination of lather volume (foaming power)*
- *Part 21: Determination of free acid in oils*
- *Part 22: Determination of sulphur and sulphides in oils*
- *Part 23: Test for absence of grit in powders*
- *Part 24: Determination of matter insoluble in boiling water*
- *Part 25: Determination of fineness*
- *Part 26: Determination of boric acid*
- *Part 27: Determination of total fatty substance by gravimetric method*
- *Part 28: Determination of free caustic alkali*

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## Cosmetics — Analytical methods — Part 9: Determination of colour

### 1 Scope

This Draft East African prescribes the test method for the determination of colour in oils and fats for cosmetic industry.

### 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 847-1, *Cosmetics — Analytical methods — Part 1: Glossary of terms*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EAS 847-1 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/>

### 4 Test method

#### 4.1 Principle

The colour of oils and fats is determined by comparison with lovibond glass of known colour characteristics. The colour is expressed as the sum total of the yellow and red slides used to match the colour of the oil in the cell of the specified size in the lovibond tintometer.

#### 4.2 Apparatus and materials

##### 4.2.1 Lovibond tintometer

**4.2.2 Glass cells**, presently, the Lovibond cell designations generally employed in the laboratories, namely  $\frac{1}{4}$  in,  $\frac{1}{2}$  in, 1 in and  $5\frac{1}{4}$  in are recommended. However, with the corresponding metric designations of the cells, such as 1 cm, 2 cm, 5 cm and 10 cm, also becoming available, their use will involve reconsideration of the requirements for colour of oils and fats.

##### 4.2.3 Filter paper

#### 4.3 Reagents

##### Carbon tetrachloride

#### 4.4 Procedure

**4.4.1** Melt the sample, if it is not already liquid, and filter through a filter paper to remove any impurities and the last traces of moisture. Make sure that the sample is absolutely clear and free from turbidity. Clean the glass cell of the desired size (see 4.2.2) with carbon tetrachloride and allow it to dry. Fill it with the clear filtered sample and place the cell in position in the tintometer.

**4.4.2** Place alongside of it such red, yellow, blue or neutral Lovibond glass slides or any combinations of these as are necessary to match the colour shade of the sample, observing the colours of the sample and of the combination of the glass slides through an eyepiece.

### 5 Report

**5.1** Report the colour of the oil in terms of Lovibond units as follows:

$$\text{Colour reading in (*) cell} = (aY + 5bR) \text{ or } (aY + 10bR)$$

where

- a is the sum of the various yellow (Y) slides used, and
- b is the sum of the various red (R) slides used.

Although the yellow and red slides required to match the colour shade of an oil in a Lovibond tintometer are assessed separately, it is found that to a certain extent, these slides are mutually compensatory. Consequently, different workers may report different values for the yellow and red units for the same oil and the same workers may report different values for yellow and red units for the oil examined at different times. To obviate such personal error, a composite factor is to be used for checking the colour, comprising the total of the yellow (Y) units and 5 or 10 times the total of the red (R) specified for the oil or fat; (Y+10 R) is the mode of expressing the colour of moderately dark-coloured oils, such as washed cottonseed oils, whereas (Y+5R) is the mode of expressing the colour of other vegetable oils.

**5.2** The dimensions of the cell used and the mode of expressing the colour reading for different oils shall be as given in Table 1.

**Table 1 — Dimensions of the cell used and the mode of expressing the colour reading for different oils**

S.No.	Oil/Fat	Size designation of cells (in)	Mode of expressing colour reading
i.	Castor	1	Y+5R
ii.	Groundnut	1	Y+5R
iii.	Coconut	1	Y+5R
iv.	Sesame	¼	Y+5R
v.	Mustard	¼	Y+5R
vi.	Mahua	¼	Y+5R
vii.	Cottonseed (washed and refined)	¼	Y+10R

## Bibliography

EAS 847-9: 2017, *Cosmetics — Analytical methods — Part 9: Determination of colour*

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