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## **DRAFT EAST AFRICAN STANDARD**

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**Crude and semi refined palm oil — Specification**

**EAST AFRICAN COMMUNITY**

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PUBLIC REVIEW DRAFT

## 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 015, *Oil seeds, edible fats and oils*.

This second edition will cancel and replaces the first edition (EAS 887:2018), which has been technically revised.

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.



## Crude and semi refined palm oil — Specification

### 1 Scope

This East African standard specifies the requirements, sampling and test methods for crude and semi refined (neutralized and/or bleached) palm oil derived from the fleshy mesocarp of the fruit of oil palm (*Elaeis guineensis*) intended for further processing.

### 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.

AOAC 952.13, Arsenic in food. Silver diethyldithiocarbamate

CXC 36, Code of Practice for the Storage and Transport of Edible Fats and Oils in Bulk

CODEX STAN 192, General Standard for Food Additives

EAS 38, Labelling of pre-packaged foods — Specification

EAS 39, Hygiene in the food and drink manufacturing industry — Code of practice

ISO 660, Animal and vegetable fats and oils — Determination of acid value and acidity

ISO 661, Animal and vegetable fats and oils — Preparation of test sample

ISO 662, Animal and vegetable fats and oils — Determination of moisture and volatile matter content

ISO 3657, Animal and vegetable fats and oils — Determination of saponification value

ISO 3961, Animal and vegetable fats and oils — Determination of iodine value using diethyl ether extraction

ISO 5555, Animal and vegetable fats and oils — Sampling

ISO 6320, Animal and vegetable fats and oils — Determination of refractive index

ISO 6321, Animal and vegetable fats and oils — Determination of melting point in open capillary tubes (slip point)

ISO 6883, Animal and vegetable fats and oils — Determination of conventional mass per volume (litre weight in air)

ISO 12193, Animal and vegetable fats and oils — Determination of lead by direct graphite furnace atomic absorption spectroscopy

ISO 15305, Animal and vegetable fats and oils — Determination of Lovibond colour

ISO 21033 Animal and vegetable fats and oils — Determination of trace elements by inductively coupled plasma optical emission spectroscopy (ICP-OES)

ISO 27608 Animal and vegetable fats and oils — Determination of Lovibond colour — Automatic method

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**3.1 crude palm oil**  
Raw vegetable oil composed primarily of glycerides of fatty acids obtained from fleshy mesocarp of the fruit of the oil palm (*Elaeis guineensis*). It may contain other lipids such as phosphatides, unsaponifiable constituents and free fatty acids naturally present in the oil

NOTE Edible virgin palm oil is excluded from this definition.

**3.2 semi refined (intermediate) palm oil**  
degummed oil which is presented as either neutralized, bleached or neutralized and bleached palm oils intended for further processing.

**3.3 neutralized palm oil**  
degummed oil treated with an alkali to reduce the level of free fatty acid

**3.4 bleached palm oil**  
oil which has been treated with food grade bleaching agents for the purpose of removing colouring pigments and impurities

**3.5 food grade packaging material**  
packaging material, made of substances which are safe and suitable for the intended use and which will not impart any toxic substance or undesirable odour or flavour to the product

### 4 Requirements

#### 4.1 General requirements

Crude and semi refined palm oil shall be:

- free from foreign odours;
- free from foreign material; and
- free from adulterants

#### 4.2 Specific requirements

Crude and semi refined palm oil shall comply with requirements given in Table 1 when tested in accordance with the methods specified therein.

**Table 1 — Specific requirements for crude and semi refined palm oil**

S/N	Parameter	Requirement					Test method
		Crude palm oil	Semi refined palm oil			Crude palm oil with higher content of oleic acid	
			Neutralized & Bleached	Neutralized	Bleached		
i)	Relative density (50 °C/ water at 20 °C )	0.891 –0.899	0.891 –0.899	0.891 –0.899	0.891 –0.899	0.896-0.910	ISO 6883
ii)	Refractive index, (ND 50 °C)	1.454 – 1.456	1.454 – 1.456	1.454 – 1.456	1.454 – 1.456	1.459-1.462	ISO 6320
iii)	Saponification value, mg KOH/g, oil	190 – 209	190 – 209	190 – 209	190 – 209	189-199	ISO 3657

iv)	Iodine value (Wijs), g/100	48 - 55	48 - 55	48 - 55	48 - 55	58-75	ISO 3961
v)	Slip point, °C	33.0 - 39.0	33.0 - 39.0	33.0 - 39.0	33.0 - 39.0	33.0-39.0	ISO 6321
vi)	Moisture and volatile matter at 105 °C, % m/m max.	0.5	0.5	0.5	0.5	0.5	ISO 662
vii)	Copper (Cu), mg/kg	0.4	0.4	0.4	0.4	0.4	ISO 21033
viii)	Iron(Fe), mg/kg	5.0	5.0	5.0	5.0	5.0	
ix)	Free Fatty Acid (FFA) (as palmitic), %, m/m	≥ 2.5 <sup>a</sup>	0.3 < 2.5 <sup>b</sup>	0.3 < 2.5 <sup>b</sup>	≥ 2.5 <sup>a</sup>	≥ 2.5 <sup>a</sup>	ISO 660
x)	Colour, 133.35 mm (5¼ in.) Lovibond	≥ 20 Rc	6 < 20 Rd	≥ 20 Rc	6 < 20 Rd	≥20R	ISO 15305 or ISO 27608

<sup>a</sup> FFA shall be greater than or equal to 2.5.

<sup>b</sup> FFA shall be greater than 0.3 but less than 2.5.

<sup>c</sup> Colour shall be greater than or equal to 20R.

<sup>d</sup> Colour shall be greater than 6 but less than 20R.

## 5 Food additives

5.1 Food Additives shall not be used in crude palm oil.

5.2 Semi refined palm oil products may contain food additives. When used they shall conform to the specified levels stated in CODEX STAN 192.

5.3 Food colour shall not be used.

## 6 Contaminants

### 6.1 Pesticide residues

Crude palm oil and semi refined palm oil shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity.

### 6.2 Heavy metal contaminants

Crude palm oil and semi refined palm oil shall comply with those maximum limits specified in Table 2 when tested in accordance with the methods specified therein

**Table 2 — Heavy metal contaminant limits in crude and semi refined palm oil**

S/ N	Contaminant	Maximum Limit mg/kg	Test method
i)	Lead (Pb)	0.08	ISO 12193
ii)	Arsenic (As)	0.1	AOAC 952.13



## 7 Hygiene

Crude and semi refined palm oil shall be produced, prepared and handled in accordance with EAS 39.

## 8 Packaging, storage and transportation

### 8.1 Packaging

Crude and semi refined palm oil shall be packaged in containers made from food grade packaging material and sealed in a manner that will safeguard the hygienic, nutritional and organoleptic properties of the product throughout the shelf life of the product.

### 8.2 Storage and transportation

Storage and transportation of edible fats and oils in bulk shall be in accordance with CXC 36.

## 9 Labelling

9.1 Labelling of crude and semi refined palm oils shall be done in accordance with EAS 38.

9.2 For the case of the "semi refined palm oil" the product shall be further described as either:

- a) 'neutralised',
- b) 'bleached', or
- c) 'bleached and neutralised'.

9.3 Where the product claims high oleic acid content, it shall be declared

## 10 Sampling

Sampling and sample preparation for testing shall be carried out in accordance with ISO 5555 and ISO 661 respectively.

