

DRAFT UGANDA STANDARD

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Crude and semi refined palm oil — Specification

PUBLIC REVIEW DRAFT



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Compliance with this standard does not, of itself confer immunity from legal obligations

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National foreword

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Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

This Draft Uganda Standard, DUS DEAS 887: 2016, *Crude and semi refined palm oil — Specification*, is identical with and has been reproduced from a Draft East African Standard, DEAS 887: 2016, *Crude and semi refined palm oil — Specification*, and is being proposed for adoption as a Uganda Standard.

This standard was developed by the Food and agriculture Standards Technical Committee (UNBS/TC 2).

Wherever the words, "East African Standard" appear, they should be replaced by "Uganda Standard."



DEAS 887: 2016

ICS

DRAFT EAST AFRICAN STANDARD

Crude and semi refined palm oil — 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.

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

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.

DEAS 887 was prepared by Technical Committee EASC/TC/015, *Oil seeds, Edible fats and oils technical committee*.

Crude and semi refined palm oil — Specification

1 Scope

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

2 Normative references

The following referenced documents are indispensable for the application 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.

CODEX STAN 192, *General Standard for Food Additives*

EAS 38, *Labelling of pre-packaged foods — Specification*

EAS 39, *Code of practice for hygiene for food and drink manufacturing industries*

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 663, *Animal and vegetable fats and oils — Determination of insoluble impurities content*

ISO 5555, *Animal and vegetable fats and oils — Sampling*

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

ISO 3596, *Animal and vegetable fats and oils — Determination of unsaponifiable matter — Method using diethyl ether extraction*

ISO 3960, *Animal and vegetable fats and oils — Determination of peroxide value — Iodometric (visual) endpoint determination*

ISO 3961, *Animal and vegetable fats and oils — Determination of iodine value*

ISO 6683, *Animal and vegetable fats and oils — Determination of conventional mass per volume (litre weight in air)*

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

ISO 2590, *General method for the determination of arsenic — Silver diethyldithiocarbamate photometric method*

ISO 8294, *Animal and vegetable fats and oils — Determination of copper, iron and nickel contents -- Graphite furnace atomic absorption method*

ISO 10539, *Animal and vegetable fats and oils — Determination of alkalinity*

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

3 Terms and definitions

For the purposes of this standard, the following term and definition shall apply.

3.1

Crude palm oil

foodstuff 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 product

is a degummed oil which is presented as either neutralized, bleached or neutralized and bleached palm oils intended for further processing

3.3

neutralized palm oil

is a 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 Quality and compositional requirements

4.1 General requirements

4.1.1 Crude and semi refined palm oil products shall be;

- a) characteristic of palm oil for the designated product
- b) free from foreign odour
- c) free from adulterants, separated water and added colouring substances

4.1.2 Crude and semi refined palm oil products shall comply with the general compositional requirements specified in Table 1.

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Table 1 — General compositional requirements for crude palm oil and semi refined palm oil products.

| S. No | Characteristics | Requirements | Method of test |
|-------|---|---------------|----------------|
| i) | Relative density (50 °C/ water at 20 °C) | 0.891 – 0.899 | ISO 6883 |
| ii) | Refractive index, (ND 50 °C) | 1.454 – 1.456 | ISO 6320 |
| iii) | Saponification value (mg KOH/g, oil) | 190 – 209 | ISO 3657 |
| iv) | Unsaponifiable matter, g/kg, max. | 12 | ISO 3596 |
| v) | Iodine value (Wijs) g/100g, min. | 48 - 55 | ISO 3961 |
| vi) | Slip point, °C, max. | 33.0 - 39.0 | ISO 6321 |
| vii) | Copper (Cu) | 0.4 | ISO 8294 |
| viii) | Iron(Fe) | 5.0 | |

4.2 Specific compositional requirements

Crude and semi refined palm oil products shall comply with requirements specified in Table 2.

Table 2 — Specific compositional requirements for crude palm oils and semi refined products

| S. No | Parameter | Product requirements | | | | Test method |
|---|--|----------------------|---------------------------------|------------------------|-----------------------|-------------|
| | | Crude Palm Oil | Semi refined palm oils products | | | |
| | | | N ¹ & B ² | N | B | |
| i) | Free fatty acid (as palmitic), %, m/m | ≥ 2.5 ³ | 0.3 < 2.5 ⁴ | 0.3 < 2.5 ⁴ | ≥ 2.5 ³ | ISO 660 |
| ii) | Moisture and volatile matter at 105 °C, % m/m max. | 0.5 | 0.5 | 0.5 | 0.5 | ISO 662 |
| iii) | Colour, 133.35 mm (5¼ in.) Lovibond, | ≥ 20 R ⁵ | 6 < 20 R ⁶ | ≥ 20 R ⁵ | 6 < 20 R ⁶ | ISO 15305 |
| <p>¹ 'N' means Neutralised;</p> <p>² 'B' means Bleached</p> <p>³FFA shall be greater than or equal to 2.5</p> <p>⁴FFA shall be greater than 0.3 but less than 2.5</p> <p>⁵Colour shall be greater than or equal to 20R</p> <p>⁶Colour shall be greater than 6 but less than 20R</p> | | | | | | |

5 Food additives

Food Additives shall not be used in crude palm oil. In case of semi refined palm oils products only additives used for purposes of refining crude oil shall be used. In both cases added colour shall not be used.

6 Contaminants

6.1 Pesticide residues

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

6.2 Other contaminants

Crude and semi refined palm oil products shall comply with those maximum limits specified in Table 3.

Table 3 — Heavy metal contaminants limits in crude palm oils and semi refined products

| SL No | Contaminant (mg/kg) | Max. Limit | Method of test |
|-------|---------------------|------------|----------------|
| i) | Lead (Pb) | 0.1 | ISO 12193 |
| ii) | Arsenic (As) | 0.1 | ISO 2590 |

7 Hygiene

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

8 Packaging

Crude and semi refined palm oil products shall be packaged in food grade containers and sealed in manner to ensure the safety and quality requirements specified in this standard are maintained throughout the shelf life of the product.

9 Labelling

Labelling of Crude palm oil and semi refined palm oils products shall be done in accordance with EAS 38.

10 Sampling

Sampling shall be carried in accordance with ISO 5555 and samples prepared for testing according to ISO 661.

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