

DRAFT KENYA STANDARD

DKS 2997:2024

ICS 67.200

First Edition

**Edible canola (rapeseed) oil —
Specification**



**Kenya Bureau of
Standards**

Standards for Quality life

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Kapa Oil Refineries Ltd.

Bidco Africa Ltd.

Kenya Medical Research Institute (KEMRI)

Kenya Industrial Research and Development Institute (KIRDI)

Government Chemists Department

Agriculture and Food Authority (AFA) — Nuts and Oil Crops Directorate (NOCD)

Agventure Limited

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Edible canola (rapeseed) oil — Specification

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Foreword

This Kenya Standard was prepared by the Edible fats and oils Technical Committee under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards

This standard was developed to guide the industry in addressing issues of quality and safety of the edible canola (rapeseed) oil. The development of this standard also seeks to promote local production, consumption, and trade of edible canola (rapeseed) oil to reduce the overreliance on importation. Additionally, the standard specifies requirements for both virgin and refined (non-virgin) canola (rapeseed) oils giving distinct quality and safety requirements for each.

During the preparation of this standard, reference was made to the following documents

CXS 210: Standard for Named Vegetable Oils

World Food Programme – Technical Specifications for fortified refined canola oil Version 2

Acknowledgement is hereby made for the assistance derived from these source

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Edible canola (rapeseed) oil — Specification

1 Scope

This draft Kenya standard specifies requirements, sampling, and test methods for virgin and refined canola (rapeseed) oil derived by extraction from seeds of *Brassica napus* L., *Brassica campestris* L., *Brassica juncea* L. and *Brassica tournefortii* Gouan species intended for human consumption.

2 Normative references

The following referenced documents 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.

CXG 66, Guidelines for the Use of Flavourings

CXS 192, General Standard for Food Additives

KS EAS 38, Labelling of prepackaged foods — Specification

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

KS EAS 769, Fortified edible fats and oils — Specification

KS EAS 803, Nutrition Labelling — Requirements

KS EAS 804, Claims — General requirements

KS EAS 805, Use of nutrition and health claims — Requirements

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

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

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

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

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

KS ISO 3960, Animal and vegetable fats and oils — Determination of peroxide value

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

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

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

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

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

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

KS ISO 13547-2, Copper, lead, zinc and nickel sulphide concentrates — Determination of arsenic Part 2 Acid digestion and inductively coupled plasma atomic emission spectrometric method

KS ISO 16050, Foodstuffs — Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products — High-performance liquid chromatographic method

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

3 Terms and definitions

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

3.1

canola (rapeseed) oil

oil produced from seeds of *Brassica napus* L., *Brassica campestris* L., *Brassica juncea* L. and *Brassica tournefortii* Gouan species

3.2

canola (rapeseed) oil- Low erucic acid

oil produced from low erucic acid oil bearing seeds of varieties derived from *Brassica napus* L., *Brassica rapa* L., and *Brassica juncea* L. species

3.3

virgin canola (rapeseed) oil

edible canola (rapeseed) oil obtained without altering its nature that may be obtained by use of mechanical procedures such as expelling or pressing, with or without the application of heat and without the use of solvents. It may have been purified by washing with water, settling, filtering and centrifuging only.

3.4

refined (non-virgin) canola (rapeseed) oil

edible canola (rapeseed) oil obtained by mechanical procedures and/or solvent extraction and subjected to refining processes.

3.5

foreign matter

any undesirable material visible with naked eye in a packaged edible canola (rapeseed) oil.

3.6

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

Edible canola (rapeseed) oil shall:

- a) be free from foreign matter
- b) be free from rancid or undesirable odour and/or taste.
- c) have colour characteristic of canola (rapeseed) oil.

4.2 Specific requirements

Edible canola (rapeseed) oil shall comply with the specific requirements given in Table 1, when tested in accordance with the methods specified therein.

Table 1 — Specific compositional and quality requirements for edible canola (rapeseed) oil

S/N	Characteristic	Requirement	Test method
i)	Moisture and Volatile matter at 105 °C, % m/m, max.	0.2	KS ISO 662
ii)	Insoluble impurities, % m/m, max.	0.05	KS ISO 663
iii)	Soap Content, % m/m, max.	0.005	KS ISO 10539
v)	Acid value, (mg/KOH/g (max). Virgin Refined	4.0	KS ISO 660
		0.6	
vi)	Peroxide value, (mEq oxygen/kg (max.)) Virgin Refined	15	ISO 3960
		10	
vii)	Iron (Fe) mg/kg, max. Virgin Refined	5.0	ISO 21033
		1.5	
viii)	Copper, mg/kg, max. Virgin Refined	0.4	
		0.1	
ix)	Iodine Value G_{I_2} per 100g • Canola (rapeseed) oil • Low erucic acid canola	94-120	ISO 3961
		105-126	

	(rapeseed) oil		
x)	Saponification value, mg KOH/g oil <ul style="list-style-type: none"> • Canola (rapeseed) oil • Low erucic acid canola (rapeseed) oil 	168-181 182-193	ISO 3657
xi)	Refractive index, at 40°C <ul style="list-style-type: none"> • Canola (rapeseed) oil • Low erucic acid canola (rapeseed) oil 	1.465- 1.469 1.465- 1.467	ISO 6320
xii)	Relative density at 20 °C <ul style="list-style-type: none"> • Canola (rapeseed) oil • Low erucic acid canola (rapeseed) oil 	0.910-0.920 0.914-0.920	ISO 6883

5 Fortification

Edible refined canola (rapeseed) oil may be fortified in accordance with KS EAS 769

6 Food additives

6.1 Edible virgin canola (rapeseed) oil shall not contain food additives.

6.2 Food additives when used in edible refined canola (rapeseed) oil shall comply with CXS 192

7 Flavouring agents

7.1 Edible virgin canola (rapeseed) oil shall not contain flavouring agents

7.2 Flavouring agents when used in edible refined canola (rapeseed) oil shall comply with CXG 66.

8 Contaminants

8.1 Pesticide residues

Edible canola (rapeseed) oil shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity.

8.2 Heavy metal contaminants

Edible canola (rapeseed) oil shall comply with the maximum limits of heavy metals as specified in Table 2 when tested in accordance with the test methods therein.

Table 2 — Heavy metal contaminants limits in edible canola (rapeseed) oil

S/N	Contaminant (mg/kg)	Max. limit	Test method
i)	Lead (Pb)	0.08	KS ISO 12193
ii)	Arsenic (As)	0.1	KS ISO 13547 -2

8.3 Aflatoxins

Aflatoxin levels in edible canola (rapeseed) oil shall not exceed the limits given in Table 3 when tested in accordance with the test method specified therein.

Table 3 — Aflatoxin limits for edible canola (rapeseed) oil

S/No.	Characteristic	Maximum limit µg/kg	Test method
i)	Total aflatoxin	10	KS ISO 16050
ii)	Aflatoxin B1	5	

9 Hygiene

Edible canola (rapeseed) oil shall be produced, processed, handled and stored in accordance with KS EAS 39.

10 Packaging

Edible canola (rapeseed) oil shall be packaged in food grade packaging material and sealed in manner that will safeguard the hygienic, nutritional and organoleptic properties of the product.

11 Labelling

In addition to the labelling requirements specified in KS EAS 38, the following information shall be legibly and indelibly labelled;

- a) name of the product as Canola oil or Rapeseed oil or Canola/Rapeseed oil - Low erucic acid
- b) type of the oil as:
 - i). Virgin
 - ii). Refined (Non-virgin)

12 Nutrition and health claims

Edible canola (rapeseed) oil may have claims on nutrition and health. Such claims when declared shall comply with KS EAS 803, KS EAS 804, and KS EAS 805

13 Sampling

Sampling and sample preparation for test shall be done in accordance with KS 1SO 5555 and KS ISO 661 respectively.

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Annex A
(informative)

Gas Liquid Chromatography (GLC) fatty acid composition

When required the fatty acid profile should be determined by Gas Liquid Chromatography. Ranges of fatty acids are as given in Table A.1

Table A.1 — GLC fatty acid composition for edible canola (rapeseed) oil

Carbon configuration	Composition, %	
	Canola (rapeseed) oil	Canola (rapeseed) oil – Low erucic acid
C14	< 0.2	<1.0
C16:0	1.5 – 6.0	2.5 – 7.0
C16:1	<3.0	<0.6
C17:0	< 0.1	<0.3
C17:1	< 0.1.	<0.3
C18:0	0.5 – 3.1	0.8 – 3.0
C18:1	8.0 – 60.0	51.0 – 70.0
C18:2	11.0– 23.0	15.0 – 30.0
C18:3	5.0 – 13.0	5.0 – 14.0
C20:0	<3.0	0.2 – 1.2
C20:1	1.0 – 15.0	0.1 – 4.3
C22:0	< 0.2	<0.6
C24:0	< 2.0	<0.3

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