

DRAFT KENYA STANDARD

**DKS 3028:
2024**

ICS 67.200.10

First Edition

Crude canola (rapeseed) oil — Specification

PUBLIC REVIEW DRAFT

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Kenya Agricultural and Livestock Research Organization (KALRO)

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In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

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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.

Kenya Bureau of Standards (KEBS) has established Technical Committees (TCs) mandated to develop Kenya Standards (KS). The Committees are composed of representatives from the public and private sector organizations in Kenya.

Kenya Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft Kenya Standards are circulated to stakeholders through the KEBS website and notifications to World Trade Organization (WTO). The comments received are discussed and incorporated before finalization of the standards, in accordance with the Procedures for Development of Kenya Standards.

Kenya Standards are subject to review, to keep pace with technological advances. Users of the Kenya Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

This standard was developed to guide the industry in addressing issues of quality and safety of the crude canola (rapeseed) oil. The development of this standard also seeks to promote local production of crude canola (rapeseed) oil and subsequent consumption and trade of edible canola (rapeseed) oil to reduce the overreliance on importation of edible oil.

It is to be noted that the products are considered as raw materials and should not be sold for direct human consumption, but they are instead meant for further processing.

During the preparation of this standard, reference was made to the following document (s):

CXS 19, Standard for edible fats and oils not covered by individual standards.

CXS 210, Standard for Named Vegetable Oils

Acknowledgement is hereby made for the assistance derived from this (these) source (s).

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Crude canola (rapeseed) oil — Specification

1 Scope

This Draft Kenya Standard specifies requirements, sampling and test methods for crude canola (rapeseed) oil derived from the seeds of *Brassica napus* L, *Brassica rapa* L, *Brassica juncea* L and *Brassica tournefortii* Gouan species intended for further processing.

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.

AOAC 952.13, *Arsenic in food. Silver diethyldithiocarbamate*

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

KS 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 804, *Claims — General 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 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 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*

3 Terms and definitions

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

3.1 crude canola (rapeseed) oil
 raw vegetable oil intended for further processing composed primarily of glycerides of fatty acids obtained from seeds of *Brassica napus* L, *Brassica rapa* L, *Brassica juncea* L and *Brassica tournefortii* Gouan species.

3.2 crude canola (rapeseed) oil - Low erucic acid
 oil intended for further processing, produced from low erucic acid bearing seeds of varieties derived from *Brassica napus* L, *Brassica rapa* L and *Brassica juncea* L species containing not more than 2 percent erucic acid (as percentage of total fatty acids).

3.3 foreign matter
 any undesirable material visible with naked eye in a packaged crude canola (rapeseed) oil

3.4 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 canola (rapeseed) oil shall:

- a) have colour and odour characteristic of crude canola (rapeseed) oil
- b) be practically free from foreign matter; and
- c) be free from adulterants

4.2 Specific requirements

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

Table 1 — Specific requirements for crude canola (rapeseed) oil

S/N	Parameter	Requirement	Test Method
i)	Relative density (20 °C /water at 20 °C)		KS ISO 6883
	<ul style="list-style-type: none"> • Canola (rapeseed) oil • Low erucic acid canola (rapeseed) oil 	0.910 - 0.920	
ii)	Refractive index, (ND 40°C)		KS ISO 6320
	<ul style="list-style-type: none"> • Canola (rapeseed) oil 	1.465 - 1.469	
		1.465 - 1.467	

	<ul style="list-style-type: none"> Low erucic acid canola (rapeseed) oil 		
iii)	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	KS ISO 3657
iv)	Iodine value (Wijs), g/100 <ul style="list-style-type: none"> Canola (rapeseed) oil Low erucic acid canola (rapeseed) oil 	94 - 120 105 - 126	KS ISO 3961
v)	Moisture and volatile matter at 105 °C, % m/m max.	0.5	KS ISO 662
vi)	Insoluble impurities % m/m max	0.5	KS ISO 663
vii)	Copper (Cu), mg/kg max.	0.4	KS ISO 21033
viii)	Iron (Fe), mg/kg max.	5.0	
ix)	Free Fatty Acid (FFA) (as oleic acid) %, m/m max	2.0	KS ISO 660

5 Food additives and colouring agents

Food additives and colouring agents shall not be used in crude canola (rapeseed) oil.

6 Contaminants

6.1 Pesticide residues

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

6.2 Heavy metals

Crude canola (rapeseed) 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 canola (rapeseed) oil

S/N	Contaminant	Maximum Limit mg/kg	Test Method
i)	Lead (Pb)	0.08	KS ISO 12193

ii)	Arsenic (As)	0.1	AOAC 952.13 or KS ISO 13547-2
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7 Hygiene

Crude canola (rapeseed) oil shall be produced, prepared and handled in accordance with KS EAS 39.

8 Packaging, storage and transportation

8.1 Packaging

Crude canola (rapeseed) 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.

8.2 Storage and transportation

Storage and transportation of crude canola (rapeseed) oil in bulk shall be in accordance with KS CXC 36.

9 Labelling

9.1 Labelling of crude canola (rapeseed) oil shall be done in accordance with KS EAS 38.

9.2 Where the product claims low erucic acid content, it shall be declared in accordance with KS EAS 804.

10 Sampling

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

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 crude 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
C20:2	< 1.0	< 0.1
C22:0	< 0.2	< 0.6
C22:1	>2.0–60.0	ND–2.0
C22:2	< 2.0	< 0.1
C24:0	< 2.0	< 0.3
C24:1	ND–0.4	ND–3.0

Bibliography

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