

**PAKISTAN STANDARD SPECIFICATION
FOR
REFINED COCONUT OIL (EDIBLE GRADE)
(3RD REVISION)**



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Karachi-Pakistan**

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0. FOREWORD

- 0.1 This Pakistan Standard was adopted by the Pakistan Standards & Quality Control Authority; Standards Development Centre on 23-06-2023 after the draft finalized by the Oil Seeds & their Allied Products Technical Committee had been approved by the National Standards Committee for Agriculture & Food products.
- 0.2 In preparation of this standard the views of the producers, consumers, technologists and testing authorities have been taken into consideration.
- 0.3 This standard was published in 1961 & first revised in 1994. Secondly it was revised in 2010. Now with changing of refining process in the country, the technical committee responsible for the formulation of this standard decided to revise the existing specification in the light of the latest technology developments in the Industries.
- 0.4 Besides medicinal preparations, coconut oil is consumed in the country for edible purposes and in such industries as hydrogenated oil products, soap and other toilet preparations. It is also used as hair oil. This standard is intended to cover the requirements of Refined Coconut Oil (Edible Grade) only.
- 0.5 PS: 56 for Pakistan Standard Methods of Sampling and Test for Vegetable Oils and Fats is a necessary adjunct to this standard.
- 0.6 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with PS: 103 for Pakistan Standard Methods of Rounding off Numerical values; the number of significant places retained in the rounded off value shall be the same as that of the specified value in this standard.
- 0.7 This standard is intended mainly to cover the technical provisions relating to the supply of the material and it does not include all the necessary provisions of a contract.
- 0.8 All the ingredients and preparation, processing, packaging, storage and/or transportation shall be in accordance with PS 3733-2022 ® /OIC SMIIC 1 :2019 – Second Revision (Modified Adoption) for General Requirements for Halal Food.

1. SCOPE

- 1.1 This standard prescribes requirements for Refined Coconut Oil Edible Grade only.

2. DEFINITION

- 2.1 Refined Coconut oil (Edible Grade) shall be coconut oil which has been refined by neutralization with alkali, bleached with bleaching earth or activated carbon or both and deodorized with steam.

3. REQUIREMENTS

- 3.1 **Description** – The material shall be obtained from clean and sound whole kernel (copra) of the coconut by a process of expression. It shall be clear and free from adulterants, sediments, suspended and other foreign matter, separated water and added coloring and flavoring substances. It shall also be free from the substances added for the purpose of refining, bleaching and deodorizing.
- 3.1.1 The oil, when maintained at a temperature of 35 °C for a period of 24 hours, shall be clear and free from sediments or other insoluble matters.
- 3.2 **Admixture with other oils** – The material shall be free from admixture with other oils including mineral oils when tested according to the methods prescribed in PS: 56 for Methods of Sampling and Test for Vegetable Oils and Fats.
- 3.3 The material shall also comply with the requirements given in Table – 1 & Table – 2

TABLE -1
REQUIREMENTS FOR REFINED COCONUT OIL (EDIBLE GRADE)
(2nd REVISION)

SL. NO.	CHARACTERISTIC	REFINED
i.	Moisture % by mass, max.	0.1
ii.	Colour in 2.5 cm (or in inch) cell on the lovibond scale expressed as Y + 10 R not deeper than	3.0 (max)
iii.	Refractive Index at 40 °C.	1.448 - 1.450
iv.	Specific gravity at 40 °C	0.908 - 0.921
v.	Iodine Value (Wijs)	6 - 10
vi.	Saponification value.	250 - 264
vii.	F.F.A. as lauric acid % by mass.	0.25 % (max)
viii.	Unsaponifiable matter % by mass.	1.5 % (max)
ix.	Melting point °C.	24 – 27
x.	Polenske value,	13 - 18
xi.	GLC range of fatty acids composition (%).	C 6:0 0.4 - 0.6 C 8:0 5 - 10 C 10:0 4.5 - 8.0 C 12:0 43 - 51 C 14:0 16 - 21 C 16:0 7.5 - 10 C 18:1 2.0 - 4.0 C 18:2 1.0 - 2.5 C 18:3 - -

		C 24:1 - 0.5
xii.	Rancidity (Kries Test)* Intensity in 1 inch cell lovibond scale.	3.0 R (max)
xiii	Peroxide value meq/Kg	5.0 (max)
ix	Vitamin-A	33000 I.U. to 45000 I.U. per kg of the finished product.
x.	Vitamin-D ₃	3000 I.U. to 4500 I.U. per kg of the finished product.

*Colour produced in Kries Test shall be interpreted alongwith peroxide value and shall be sensory test as negative, if the colour is not deeper than 3.0 R 1 inch cell lovibond.

NOTE-1: The relevant testing methods of ISO, CAC and of other internationally recognized standard methods may be taken in to account for analysis purpose.

NOTE-2: Vitamin A & D₃ in Bulk Oils on Import Stage is not necessary.

TABLE-2
REQUIREMENTS FOR CONTAMINANTS

	Contaminant Limits
Matter volatile at 105°C	Not more than 0.2%
Insoluble impurities	Not more than 0.05% m/m
Iron (Fe)	Not more than 1.5 mg/kg
Copper (Cu)	Not more than 0.1 mg/kg
Lead (Pb)	Not more than 0.1 mg/kg
Arsenic (As)	Not more than 0.1 mg/kg

4. **SAMPLING**

4.1 Representative samples of the material shall be drawn in accordance with manner prescribed in PS: 56 for Methods of Sampling and Test for Vegetable, Oils & Fats.

5. **TEST**

5.1 Test shall be carried out as prescribed in appropriate appendices of PS:56 for Methods of Sampling and Test for Vegetable Oils and Fats.

6. **PACKING AND MARKING**

6.1 **Packing** – The product shall be packed in properly sealed container made from Food Grade Material.

6.2 **Marking** – The following particulars shall be marked on each container, or label attached to the container:-

- a. Name of the product.
- b. Name and address of the manufacturer.
- c. Code or batch number.
- d. Net weight.
- e. Date of manufacture & expiry.
- f. Any other particulars as required by the purchaser and the vendor.
- g. The words contain Vitamin-A 33000 I.U. to 45000 I.U. and Vitamin-D₃ 3000 I.U. to 4500 I.U. per kg of the finished product when packed.
- h. Pakistan standard number, PS mark & license number.
- i. Storage conditions.
- j. Product shall be labelled in accordance with the Pakistan Standard for Labelling of Prepackaged Foods (PS: CXS 1-2021), in addition to category specific labelling / marking requirement(s).

6.2 The weight of Tin container for Packing of Refined Coconut Oil shall as follows :

Weight of Finished Product Litre	Weight of Tin Containers (gm)
16	880 to 890
10	660 to 670
05	330 to 340
03	200 to 210
01	-
500 ml	-
250 ml	-
100 ml	-