

**PS: 1561-2023**  
**(ICS No: 67.200.10)**

**PAKISTAN STANDARD SPECIFICATION**

**FOR**

**PALM OIL OIL EDIBLE GRADE**  
**(2<sup>ND</sup> REVISION)**



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FOR  
PALM OIL EDIBLE GRADE  
(2<sup>ND</sup> REVISION.)**

**0. FOREWORD**

- 0.1 This Pakistan Standard was adopted by the Standards Development Centre; Pakistan Standards Quality Control Authority on **23-06-2023** after the draft finalized by the Oil Seeds & their Allied Products Technical Committee has been approved by the National Standards Committee for Agriculture & Food Products.
- 0.2 This Standard was established in 1983 and firstly it was revised in 2010. Now the Committee felt it to revise in the light of latest development in the industries.
- 0.3 Palm oil is obtained from the fruits of Oil Palm tree (*Elaeis guineensis*). It is obtained from the outer fleshy part of the pulp called mesocarp.
- 0.4 In preparation of this standard, the views of the manufacturers, consumer technologists and testing authorities, etc., have been taken into consideration.
- 0.5 The final value, expressing the results of a test or analysis, shall be rounded off in accordance with PS:103 for 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 the standard.
- 0.6 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 and methods of sampling for palm oil edible grade.

**2. TERMINOLOGY**

- 2.1 For the purpose of this standard, the following definition in addition to the definitions given, in PS:56 shall apply:
- 2.1.1 Palm Oil Edible Grade shall be obtained chemically or physically by refining, bleaching and deodorizing. No harmful Chemicals shall be used in the manufacture.

**3. REQUIREMENTS**

- 3.1 **Description** – The material shall be obtained from the fleshy mesocarp of the fruit of the oil palm tree (*Elaeis guineensis*) by a suitable process of extraction.

3.2 The material shall be clear on melting and free from rancidity adulterants, sediments, suspended and other foreign matter, separated water, and added colouring or flavouring substances and shall have acceptable taste and odour. It may contain permitted antioxidants in specified quantities (as certain antioxidants are allowed as laid down by the CAC/WHO Standard).

3.2.1 The clarity of the material shall be judged by the absence of turbidity after keeping the filtered sample at 50 °C for 24 hours.

3.3 **Admixture with other oils** – The material shall be free from admixture with mineral or other oils of vegetable or animal origin when tested according to the methods prescribed in PS: 56.

3.4 The material shall also comply with the requirements given in Table – 1 and Table – 2.

#### 4. PACKING

4.1 The product shall be packed in suitably sealed and well closed containers made from food grade material.

#### 5. MARKING

5.1 The containers shall be marked with the following particulars :-

- i. Name of the material in Block letter e.g. PALM OIL EDIBLE GRADE (for Cooking Purpose).
- ii. Date of manufacture and expiry.
- iii. Name and address of manufacturer and trade mark if any.
- iv. Net weight / volume of the content in kg/liter, and
- v. The words contain Vitamin-A 33000 I.U. to 45000 I.U. and Vitamin-D<sub>3</sub> 3000 I.U. to 4500 I.U. per kg of the finished product when packed.
- vi. Pakistan Standard Number, License number and PS Mark.
- vii. Storage conditions.
- viii. 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)

5.1.1 The weight of container for Packing of Palm Oil Edible Grade should be as follows :

Volume 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	-

5.1.2. No label declaration, methods of preparation and publicity concerning the product, shall be made in a manner likely to mislead the purchaser and/or consumer as to the true nature or composition of the product as a whole.

**TABLE – 1**  
**REQUIREMENTS FOR PALM OIL EDIBLE GRADE**  
**(Clause 3.4)**

SL. NO.	CHARACTERISTICS	REQUIREMENTS
(1)	(2)	(3)
i.	Moisture and insoluble impurities, % by wt. max.	0.1
ii.	Colour in a 1-inch cell on lovibond scale express as (Y + 10 R), max.	60
iii.	Refractive index *at 50 °C.	1.4491 to 1.4552
iv.	Saponification value	195 to 205
v.	Iodine value (wijs).	50 to 55
vi.	Free fatty acids (as oleic acid) % by wt.	0.25
vii.	Unsaponifiable matter, % by weight, max.	1.2
viii.	Melting point, °C, (Open capillary slip method).	36 ± 2
ix.	Peroxide value, expressed as milliequivalents oxygen per kg, max.	10
x.	Rancidity (Kries Test) **.	3.0 R
xi.	Vitamin – A,	33000 I.U. to 45000 I.U per kg, of finished product
xii.	Vitamin-D <sub>3</sub> ,	3000 I.U. to 4500 I.U per kg, of finished product

**NOTE:** Vitamin-A & D<sub>3</sub> in Bulk Oils on Import Stage is not necessary.

\*This corresponds to Butyro Refractometer (BR) reading of 35.5 to 44.0 at 50 °C.

\*\*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 scale.

**TABLE-2**  
**REQUIREMENTS FOR CONTAMINANTS**

	<b>Contaminant Limits</b>
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

## 6. SAMPLING

6.1 Representative samples of the material shall be drawn as prescribed under PS:56.

## 7. TEST METHODS

The relevant testing methods of ISO, CAC and of other internationally recognized Standard methods may be taken in to account for analysis purpose.

7.1 **Quality of Reagents** – Unless specified otherwise, analytical grade chemicals and distilled water (PS: 593) shall be used in tests.

**NOTE:** Analytical Grade Chemicals shall mean chemical that do not contain impurities which effects the result of analysis.