

PS
21-2003 (R)
ICS No.67.200.20

PAKISTAN STANDARD

REFINED COTTON SEED OIL (2ND REV.)



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PAKISTAN STANDARDS AND QUALITY CONTROL AUTHORITY
Standards Development Centre,
39 – Garden Road, Saddar,
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PAKISTAN STANDARD SPECIFICATION
FOR
REFINED COTTON SEED OIL (2ND REV.)
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PAKISTAN STANDARD SPECIFICATION

FOR

REFINED COTTON SEED OIL (2ND REV.).

0. FOREWORD

01. This Pakistan Standard was adopted by the Pakistan Standards & Quality Control Authority, Standards Development Centre on 28th January, 2003, after the draft finalized by the Oil Seeds & their Allied Products Sectional Committee had been approved by the Agriculture & Food Products Divisional Council.
02. This Pakistan Standard specification was originally adopted in 1993 keeping in view the latest development the committee felt it to revise again.
- 0.3 This standard specification is based on data available on various varieties of Cotton Seed grown in different parts of the country. It is used as a edible/vegetable oil after suitable refining and deodorization and is also used in the manufacture of hydrogenated vegetable oil products.
- 0.4 In preparation of this standard, the views of the manufacturers, 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:103-1991 (1st Rev.) "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.

1. SCOPE

- 1.1 This standard prescribes the requirements and methods of sampling and test for refined Cotton Seed Oil.

2. TERMINOLOGY

- 2.1 For the purpose of this standard the following definition in addition to the definitions given under 2 of PS:56-1996 Methods of Sampling & Test for Vegetable Oil (1st Rev.) shall apply.
 - 2.1.1 Refined Cotton Seed Oil shall be obtained by Chemical or Physical refining, bleaching and deodorization. The final products shall be free from harmful chemicals.

3. REQUIREMENTS

Description – The material shall be obtained from the seeds of various cultivated species of *Gossypium* by a process of solvent extraction or by a process of expression or any other suitable process.

- 3.1 The material shall be clear and free from adulterants, sediments suspended and other foreign matter, separated water and shall have acceptable taste and odour. It may contain antioxidants and synergist as follows :

ANTIOXIDANTS

MAXIMUM LEVEL OF USE

- | | | |
|-------|---|---|
| i. | Propyl octyl, and dodecyl gallates | 100 mg/kg individually or in combination. |
| ii. | Butylated hydroxy-toluene (BHT)
Butylated hydroxyanisole (BHA) | 200, mg/kg individually or in combination. |
| iii. | Any combination of gallates with BHA, or BHT both. | 200 mg/kg but gallates not to exceed 100 mg/kg. |
| iv. | Natural & Synthetic tocopherols | Not limited |
| v. | Ascorbyl palmitate or in combination. | 200 mg/kg individually |
| vi. | Ascorbyl stearate | 200 mg/kg individually or in combination. |
| vii. | Dilauryl thiodirodionate | 200 mg/kg |
| viii. | Tertiary Butly Hydroquinone (TBHQ). | 200 mg/kg. |

ANTIOXIDANT SYNERGISTS

MAXIMUM LEVEL OF USE

- | | | |
|------|-------------------------------|---|
| i. | Citric acid & its sodium salt | Limited by GMP. |
| ii. | Isopropyl Citrate mixture | 100 mg/kg |
| iii. | Phosphoric acid | 100 mg/kg individually or in combination. |

- 3.2 **Colour** – Only the natural colour should be used where necessary and the container should be labelled accordingly.

Flavour – Natural flavours and their identical synthetic equivalents, except those which are known to represent a toxic hazard and other Synthetic flavours approved by the Codex Alimentarius Commission are permitted for the purpose of restoring natural flavour lost in processing or for the purpose of standardizing flavour, as long as the added flavour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be greater than actual value.

- 3.3.1 Use of the following solvents in flavour is prohibited :

- i. Diethylene glycol Mono ethyl ether.
- ii. Isopropyl alcohol.

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- 3.3.2 When natural flavour or artificial flavour shall be used, the container shall be labeled with legend “Contains natural flavour or synthetic flavour”.
- 3.3 The clarity of the material shall be judged by the absence or turbidity after keeping the filtered sample at 35 °C for 5 hours.
- 3.4 **Turbidity** – Admixture with other oils – The materials shall be free from mixture with mineral or other oils of vegetable or animal origin when tested according to the method, prescribed in PS:56 – 1996.
- 3.5 The material shall also comply with the requirements given in Table – 1.

4. PACKING AND MARKING

- 4.1 The product shall be packed in suitable sealed and well closed containers made from food grade material in accordance with PS:4797-2002 for Flexible Packs for the Packing of Banaspati, Cooking Oil and Edible Oils or Plastic container made from Food Grade plastic or in accordance with PS:4773-2002 for Tinplate Containers for Ghee, Banaspati, Cooking Oil/Edible Oils.
- 4.2 The weight of tin container for packing of Cotton Seed Oil shall be as follows :

WEIGHT OF FINISHED PRODUCT

16 Litre
10 Litre
5 Litre
2.5 Litre

WEIGHT OF TIN CONTAINERS

880 g to 890 g
660 g to 670 g
330 g to 340 g
180 g to 190 g

4.3 MARKING

The container shall be marked with the following particulars :-

- i. Name of the material in Block letter, e.g. **REFINED COTTON SEED OIL**
- ii. Date of manufacture and Date of expiry.
- iii. (PS:4449-1999 Expiration periods for food product shall be strictly followe).
- iv. Name and address of manufacturer.
- v. Net volume of the contents in litre.
- vi. Chemical parameters & their value should be displayed on the label., like Moisture, Iodine Value, Peroxide Value, FFA and Colour etc.
- vii. The words contains 33000- I.U. \pm 10 % (Assay variation) of Vitamin-A per kg of the finished product when packed.
- viii. Pakistan Standard Number and PS Mark.
- ix. Licence Number.
- x. Storage conditions.

- 5.1 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 REFINED COTTON SEED OIL (2ND REV.)

SL: NO.	CHARACTERISTIC	LIMITS	REF. TO CLAUSE OF PS:56-1996*
i.	Moisture and insoluble impurities percent by weight, max.	0.15	4
ii.	Colour in a 5¼inch cell on lovibond scale.	R – 5 Y – 50	12
iii.	Refractive index at 40 °C.	1.4580 to 1.4660	9
iv.	Relative density (20 °C/Water at 20 °C)	0.910 to 0.921	10
v.	Saponification value.	189 to 198	14
vi.	Iodine Value (Wijs).	100 to 115	13
vii.	Unsaponifiable matter, percent by weight, max.	1.5	7
viii.	Peroxide value, expressed as milliequivalent oxygen per kg. Max.	10.0	20
ix.	Anisidine Value max / Rancidity (Kries Test) *****, max.	3.0 R	See Appendix-C of PS:221-2003 (3 rd Rev.)**
x.	Vitamin-A	33000 I.U. ± 10% (Assay variation) per kg of the finished product	23
xi.	Cloud point, max.	10 °C	PS:ISO:3015-1992**
xii.	Free Fatty Acid. (as oleic acid) percent by weight, max.	0.2	6
xiii.	Helphen Test ¹	Positive	See Vol.13 of Codex Alimentarius.
xiv.	Soap content., ppm, max.	50	Appendix-D of PS:221-2003 (3 rd Rev.)***

* Methods of Sampling & Test for Vegetable Oils and Fats.

** ISO-3015-1992 Petroleum Oil Determination of cloud point.

*** Banaspati Ghee (1st Rev.).

**** 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.
¹ Kapok Oil and some other oils give a positive test and fats from Animals fed on cotoon seed meal may also give a positive test. Different lots of Cotton Seed Oil may react with different intensities. Hydrogenation and heating of Cotton Seed Oil reduce the intensity of the reaction and may destroy it entirely.

6. **SAMPLING**

Representative samples of the material shall be drawn as prescribed under PS:56-1996.

7. **TEST METHODS :**

Test should be carried out in accordance with the methods prescribed in PS:56-1996.

Quality of Reagents – Unless specified otherwise analytical grade chemicals and distilled water (PS:593 –1991) shall be used in test.

NOTE – Analytical grade chemicals shall mean chemicals that do not contain impurities which affect the results of analysis.

