उत्पाद मानुयल
PALM FATTY ACIDS - SPECIFICATION
IS 12067:2023 के अनुसार

PRODUCT MANUAL FOR
PALM FATTY ACIDS - SPECIFICATION
ACCORDING TO IS 12067:2023

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम 2018 की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरणके प्रचलन मे रीति और पारदर्शिता के सुसंगता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप मे उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	**उत्पाद** **Product**	:	IS 12067:2023
	शीर्षक **Title**	:	Palm Fatty Acids - Specification
	संशोधन संख्या **No. of Amendments**	:	Nil
2.	**नमुनाकरण दिशा निर्देश** **Sampling Guidelines:**		
a)	**कच्चा माल** Raw material	:	Manufacturer to submit declaration/ undertaking for the raw materials, in compliance to Clause 4.1 of IS 12067:2023
b)	**समूहिकरण दिशा निर्देश** Grouping guidelines	:	कृपया Annex-ए देखें Please see Annex – A
c)	**नमूनेका परिमाण** Sample Size	:	500g
3.	**परीक्षण उपकरणो की सूची** **List of Test Equipment**	:	कृपया Annex-B देखें Please see Annex – B
4.	**निरीक्षण व परीक्षण स्कीम** **Scheme of Inspection and**	:	कृपया Annex-C देखें Please see Annex – C

	Testing		
5.	**एक दिन में संभावित परीक्षण** **Possible tests in a day :**		
	i) Freedom from sediments, suspended and other foreign matter and separated water ii) Clear and transparent on melting above 50^0C (*For Grade 1 and Grade 3*) iii) Moisture iv) Saponification value v) Acid value vi) Iodine value vii) Mineral acidity viii) Ash, percent by mass ix) Unsaponifiable matter x) Titre xi) Colour xii) Flash Point		
6.	**लाइसेन्स का कार्यक्षेत्र / Scope of the Licence**:		
	IS 12067:2023 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है "Licence is granted to use Standard Mark as per IS 12067:2023 with the following scope:		
	उत्पाद का नाम Name of the product	Palm Fatty Acids	
	Grade(s)	Grade 1; and/or Grade 2 ; and/or Grade 3	

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ANNEX – A
TO THE PRODUCT MANUAL FOR PALM FATTY ACIDS - SPECIFICATION ACCORDING TO IS 12067:2023

GROUPING GUIDELINES

1. Palm Fatty Acids have been classified into following 2 grades (clause 4):

Sl. No.	Grades
i.	Grade 1
ii.	Grade 2
iii.	Grade 3

2. The manufacturer shall declare the Grade of Palm Fatty Acids, they intend to cover in the scope of licence. The sample of each grade to be drawn and shall be subjected to testing for considering grant of licence/inclusion of that type

3. It shall be ensured that the firm is having all the necessary manufacturing and testing facilities for the manufacture and testing of the Grade of Palm Fatty Acids to be included in the licence.

4. During the operation of licence, BO shall ensure that all the Grades of Palm Fatty Acids, covered in the license are drawn for independent testing on rotation over a period of time.

ANNEX-B

TO THE PRODUCT MANUAL FOR
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List of Test Equipment

Major test equipment required to test as per the Indian Standard

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Description, Clause 4.1	(i) Hot plate (ii) Beaker
2	Moisture, Clause 4.3, Table 1, Sl. No. (i)	**Air-Oven method** (i) Moisture Dish (ii) Desiccator (iii) Air-oven OR **Hot-Plate Method** (i) Glass beaker — 100 to 150 ml capacity (ii) Small glass rod (iii) Desiccator (iv) Electric hot-plate OR **Distillation Method** (i) Apparatus as per Fig1 of IS 548(Part 1/Sec 2) consisting of Flask, Condenser, Receiver(trap), (ii) Potassium dichromate-sulphuric acid cleaning solution (iii) Xylene or toluene OR **Karl Fischer Method (Pyridine free)** (i) Karl Fischer apparatus (ii) Analytical Balance readable to the nearest 0.1 mg (iii) Karl Fischer reagent (iv) Syringes (1 ml, 2 ml, 5 ml, 10 ml and 20 ml)
3	Saponification Value, Clause 4.3, Table 1, Sl. No. (ii)	(i) Analytical balance, (ii) Water-Bath or electric hot plate with rheostat control (iii) Reflux Condensor (iv) Burette (v) Alcoholic potassium hydroxide, (vi) Phenolphthalein indicator (vii) Standard Hydrochloric Acid (viii) Aldehyde-Free Rectified Spirit

4	Acid value, Clause 4.3, Table 1, Sl. No. (iii)	(i) Analytical balance (ii) 95 % (by Vol.) rectified spirit (iii) Standardized NaOH (0.5N) (iv) 0.1N, Phenolphthalein Indicator 1% w/v solution in rectified spirit (v) Ethyl Alcohol (vi) Standard Aqueous Potassium Hydroxide or Sodium Hydroxide
5	Iodine Value, Clause 4.3, Table 1, Sl. No. (iv)	**WIJS method** (i) Analytical balance (ii) Glacial Acetic acid (iii) Chloroform (iv) Iodine Monochloride, (v) Potassium iodide solution, (vi)Standard Sodium Thiosulphate (vii) Starch Solution (viii) Burette (ix) Pipette (x) Measuring Cylinder (xi) Potassium Dichromate (xii) Iodine Crystals, re-sublimed (xiii) Chlorine Gas, dry (xiv) Iodine Trichloride (ICI_3) (xv) Wijs Iodine monochloride Solution (xvi) Concentrated Hydrochloric Acid, conforming to IS 265
6	Mineral Acidity, Clause 4.3, Table 1, Sl. No. (v)	(i) Methyl Orange indicator (0.05% m/v solution) (ii) Light petroleum Ether (60 Deg C/80 Deg C) (iii) Separating funnels
7	Ash, Clause 4.3, Table 1, Sl. No. (vi)	(i) Analytical balance, (ii) Muffle furnace (550±10°C) (iii) Platinum Crucible (iv) Desiccator With desiccant, such as fused calcium chloride
8	Unsaponifiable Matter, Clause 4.3, Table 1, Sl. No. (vii)	(i) Flat bottomed or conical flask (ii) Separating funnel (iii) Alcoholic KOH (iv) Phenolphthalein indictor (v) Ethyl Alcohol (vi) Petroleum Ether (vii) Aqueous Alcohol (viii) Standard Sodium Hydroxide Solution (ix) Acetone

9	Titre, Clause 4.3, Table 1, Sl. No. (viii)	(i) Water (or other liquid) bath (ii) Saponification flask (250 ml) (iii) 2 L Beaker (iv) Wide mouth Bottle (v) Titre test-tube (vi) Glass stirrer (vii) Thermometer (0-110 Deg C) (viii) Corks (ix) Titre Thermometer as per Cl. 13.1.8 (x) Glycerol-Caustic Potash (xi) Dilute sulphuric acid (xii) Methyl orange indicator (xii) Acetone
10	Colour, Clause 4.3, Table 1, Sl. No. (ix)	(i) Lovibond Tintometer or colorimeter (ii) Filter Paper (iii) 5 ¼ inch / ¼ inch / ½-inch Glass Cell.
11	Flash Point, Clause 4.3, Table 1, Sl. No.(x)	(i) Cleaning solvent, (ii) Flash point apparatus, (iii) Temperature measuring devices, (iv) Barometer, absolute pressure reading (accuracy of ±0.5 kPa and with a resolution of 0.1 kPa), (v) Heating bath or oven explosion-protected type.

12	Fatty Acid Clause 4.4, Table 2	**Method A** i) Gas liquid chromatograph, ii) Syringe — 10 µl graduated in 1/10th of a microlitre, iii) Recorder, Integrator or calculator, iv) 50 and 100 ml boiling flasks, v) Reflux condenser, Graduated pipette – 10 ml, vi) Test tubes with ground stoppers., vii) 250 ml separating funnels, viii) Carrier gas - Inert gas (nitrogen, helium, argon) thoroughly dried and containing less than 10 mg/kg of oxygen, ix) Auxillary gas hydrogen 99.9 percent minimum purity, x) Free from organic impurities, air or oxygen, xi) Reference standards — A mixture of methyl esters or methyl esters of oils of known purity preferably similar to the fatty matter being analysed, xii) Methanolic Sodium hydroxide solution — Approx 0.5 N, xiii) sodium carbonate, xiv) Methanolic solution of boron trifloride — 12-15 % m/m, methanolic solution of boron trifloride, xv) Heptane-chromatographic quality, xvi) Redistilled petroleum ether 40 – 60 °C, xvii) Anhydrous sodium sulphate xviii) Saturated solution of sodium chloride, xix) Methyl red **Method B (Alternate Method for Preparing Methyl Esters)** i. Methanol containing not more than 0.5 percent water, ii. Methanolic potassium hydroxide solution, iii. Heptane chromatographic quality, iv. Anhydrous sodium sulphate, v. Nitrogen, containing not more than 0.5 mg/kg of oxygen.

The above list is indicative only and may not be treated as exhaustive

ANNEX C
TO PRODUCT MANUAL FOR
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Scheme of Inspection and Testing

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare and implement a calibration plan for the test equipments.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. PACKING AND MARKING- –The Standard Mark(s) as given in the Schedule of the licence shall be shall be marked on each container or printed on the label applied to the container as the case may be, provided always that the material in each container to which this mark is applied conforms to the requirements of the specification.

3.1 PACKING - The material shall be packed in suitable form of packing as per provisions of clause 5.1 of IS 12067:2023.

3.2 MARKING - The information as mentioned under clause 5.2 of IS 12067:2023 shall be legibly and indelibly marked on each container. In addition, the following shall be incorporated on each container:
i) BIS Licence No. (CM/L……)
ii) For details of BIS certification details please visit www.bis.gov.in'.

4. CONTROL UNIT – For the purpose of this scheme, the entire quantity of the same Grade of Palm Fatty Acid manufactured and filled continuously in a day, shall constitute a Control Unit.

5. LEVELS OF CONTROL – The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the entire production of the factory which is covered by this scheme and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standard and covered by this licence shall be marked with the Standard Mark.

6. REJECTIONS –Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1 (Levels of Control)
(Para 5 of Scheme of Inspection and Testing)

(1)				(2)	(3)		
Test Details				**Test equipment requirement R: required (or) S: Sub-contracting permitted**	**Levels of Control**		
Cl.	**Requirement**	**Test Method Cl. Ref.**	**Test Method IS**		**No. of Sample**	**Frequency**	**Remarks**
4.2	a) Freedom from sediments, suspended and other foreign matter and separated water b) Clear and transparent on melting above 50^0C (*For Grade 1 and Grade 3*)	4.2	IS 12067	R	Firm to have adequate in-process controls to check compliance of this parameter as per the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
4.3, Table 1	Moisture	6	IS 548(Part-1/Sec2)	R	One	Each control unit	
4.3, Table 1	Saponification value	16	IS 548(Part-1/Sec2)	R	One	Each control unit	
4.3, Table 1	Acid value	8	IS 548(Part-1/Sec2)	R	One	Each control unit	
4.3, Table 1	Iodine value	15	IS 548(Part-1/Sec2)	R	One	Each control unit	
4.3, Table 1	Mineral acidity	Annex A-1	IS 12067	R	One	Each control unit	
4.3, Table 1	Ash	Annex A-2	IS 12067	R	One	Each Control unit	
4.3, Table 1	Unsaponifiable matter	9	IS 548(Part-1/Sec2)	R	One	Each Control unit	
4.3, Table 1	Titre	13	IS 548(Part-1/Sec2)	R	One	Each control unit	
4.3, Table 1	Colour	14.1	IS 548(Part-1/Sec2)	R	One	Every Four hours	

4.3, Table 1	Flash point	Procedure C	IS 1448(P-21)	R	One	Each control unit	
4.4	Fatty Acid Composition of Palm Fatty Acids	---	IS 548 (Part 3/Sec 1)	R	One	Each Control unit	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.