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MS 815 (2007) (English): PALM STEARIN -
SPECIFICATION (SECOND REVISION)



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MALAYSIAN STANDARD

MS 815:2007

PALM STEARIN - SPECIFICATION (SECOND REVISION)

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Committee representation

The Food and Food Products Industry Standards Committee (ISC U) under whose authority this Malaysian Standard was developed, comprises representatives from the following organisations:

Department of Agriculture

Department of Chemistry Malaysia

Department of Standards Malaysia

Federal Agricultural Marketing Authority

Federation of Malaysian Manufacturers

Malaysian Agricultural Research and Development Institute

Malaysian Association of Standards Users

Malaysian Institute of Food Technology

Malaysian Palm Oil Association

Malaysian Palm Oil Board

Ministry of Agriculture and Agro-Based Industry

Ministry of Health Malaysia

Ministry of International Trade and Industry

Ministry of Science, Technology and Innovation (National Biotechnology Division)

Universiti Kebangsaan Malaysia

Universiti Putra Malaysia

The Technical Committee on Fats and Oils which developed this Malaysian Standard was managed by the Malaysian Palm Oil Board in its capacity as an authorised Standards-Writing Organisation and consists of representatives from the following organisations:

Kumpulan Guthrie Berhad

Malayan Edible Oil Manufacturers' Association

Malaysian Oleochemical Manufacturers' Group

Malaysian Palm Oil Association

Malaysian Palm Oil Board (Secretariat)

Ministry of Health Malaysia

Palm Oil Refiners Association of Malaysia

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FOREWORD

This Malaysian Standard was developed by the Technical Committee on Fats and Oils under the authority of the Food and Food Products Industry Standards Committee. Development of this standard was carried out by the Malaysian Palm Oil Board (MPOB) which is the Standards-Writing Organisation (SWO) appointed by SIRIM Berhad to develop standards for palm oil products, oil-based food products, oleochemicals, palm kernel products and oil palm-based products.

This Malaysian Standard is the second revision of MS 815, *Specification for palm stearin*.

The major modifications in this revision are as follows:

- a) The scope and definitions have been amended to include stearins from multi-stages fractionation. Separate definitions have been stipulated for refined, bleached and deodorised palm stearin and neutralised, bleached and deodorised palm stearin.
- b) The colour specification for refined, bleached and deodorised/neutralised, bleached and deodorised palm stearin in Table 2 is amended to 3R.
- c) The range for total carotenoids has been amended to "300 to 500mg/kg" in line with values achieved in the industry.

This Malaysian Standard cancels and replaces MS 815:1991, *Specification for palm stearin*.

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.

PALM STEARIN - SPECIFICATION (SECOND REVISION)

1. Scope

This Malaysian Standard specifies requirements for different products of palm stearin, i.e. the high-melting fraction obtained from fractionation process of Malaysian palm oil through any of the following three processes:-

- a) Dry fractionation through crystallisation of the oil by controlled cooling and subsequent filtration.
- b) Detergent fractionation through crystallisation of the oil by controlled cooling and separation of the fractions after addition of a surface active agent; after fractionation, the surface active agent is removed by washing.
- c) Solvent fractionation through controlled crystallisation of the oil in a solvent followed by separation of the fractions; after separation, the solvent is removed from each fraction.

2. Normative References

The following normative references are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the normative references (including any amendments) applies.

Malaysian Food Regulations 1985

MS 817, *Method of tests for palm oil and palm oil products*, related series

MS 1231, *Method of sampling for palm oil and palm oil products*

3. Definitions

For the purposes of this standard, the following definitions apply:-

3.1 Crude palm stearin

Crude palm stearin is the high-melting fraction obtained by a one-stage or multi-stage fractionation of crude palm oil.

3.2 Neutralised palm stearin

Neutralised palm stearin is the high-melting fraction obtained by a one-stage or multi-stage fractionation either from neutralised palm oil or from crude palm oil and subsequently neutralised with alkali.

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3.3 Neutralised, bleached palm stearin

Neutralised bleached palm stearin is the high-melting fraction obtained by a one-stage or multi-stage fractionation either from neutralised and bleached palm oil or crude palm oil and subsequently neutralised with alkali and bleached with bleaching earth or from neutralised palm oil and subsequently bleached with bleaching earth or activated carbon or both.

3.4 Refined, bleached and deodorised palm stearin

Refined, bleached and deodorised palm stearin is the high-melting fraction obtained by one-stage or multi-stage fractionation from refined, bleached and deodorised palm oil.

3.5 Neutralised, bleached and deodorised palm stearin

Neutralised bleached and deodorised palm stearin is the high-melting fraction obtained by a one-stage or multi-stage fractionation of crude palm oil and subsequently refined by neutralisation with alkali, treatment with bleaching earth or activated carbon or both, and deodorised by steam; or the high-melting fraction obtained from the fractionation of neutralised, bleached and deodorised palm oil.

4. Identity characteristics

The identity characteristics for palm stearin are given in Table 1. The ranges of these identity characteristics are not mandatory and are considered as guideline levels.

5. Quality characteristics

5.1 General characteristics

5.1.1 Colour at 55 °C to 70 °C

The colour of crude or neutralised palm stearin shall be bright, clear, and reddish yellow. The colour of neutralised, bleached palm stearin shall be bright, clear and orange yellow while that for refined/neutralised, bleached and deodorised palm stearin shall be bright, clear and light yellow.

5.1.2 Odour

All palm stearin products shall be free from foreign and rancid odour.

5.2 Quality requirements

5.2.1 This standard shall incorporate the following palm stearin products:

- a) Crude palm stearin.
- b) Neutralised palm stearin.

Table 1. Identity characteristics for palm stearin

Identity characteristics	Observed range
Apparent density, g/ml, at 60 °C	0.881 3 to 0.884 4
Refractive index, n_D 40 °C	1.4482 to 1.450 1
Saponification value, mg KOH/g oil	193 to 205
Unsaponifiable matter, %	0.30 to 0.90
Fatty acid composition (wt % as methyl esters)	
C12:0	0.1 to 0.3
C14:0	1.1 to 1.7
C16:0	49.8 to 68.1
C16:1	< 0.05 to 0.1
C18:0	3.9 to 5.6
C18:1	20.4 to 34.4
C18:2	5.0 to 8.9
C18:3	0.1 to 0.5
C20:0	0.3 to 0.6
Iodine value (Wijs)	27.8 to 45.1
Slip melting point, °C	46.6 to 53.8
Total carotenoids (as β -carotene), mg/kg	300 to 500

NOTE. The identity characteristics of processed palm oil differ in no significant ways from those of crude palm oil with the exception of caretenoids.

- c) Neutralised, bleached palm stearin.
- d) Refined, bleached and deodorised palm stearin.
- e) neutralised, bleached and deodorised palm stearin.

5.2.2 The product, at the time of shipment as per current trade practice, i.e. at the point and time of delivery of the oil from sellers' tanks, whether ex-refinery, ex-bulking installation, or otherwise, as the case may be, shall conform to the requirements prescribed in Table 2.

5. Hygiene

The product shall be processed and packed in premise licensed under hygienic conditions in accordance with the public health legislation currently in force in Malaysia.

Table 2. Quality requirements for palm stearin products

Characteristics	Product requirements			
	Crude	Neutralised	Neutralised, bleached	Refined, bleached and deodorised/ neutralised, bleached and deodorised
Free fatty acid (as palmitic), % max.	5.0	0.25	0.25	0.20
Moisture and impurities, % max.	0.25	0.15	0.15	0.15
Iodine value (Wijs), max.	48	48	48	48
Slip melting point, °C min.	44	44	44	44
Colour, 133.35 mm (5¼ in) Lovibond, max.	-	-	20R	3R

7. Packaging and labelling

7.1 Packaging

The product shall be supplied in bulk or in rust-free steel drums, or as agreed upon between the purchaser and the supplier.

7.2. Labelling

7.2.1 The product shall comply with current Malaysian Food Regulations 1985 on labelling.

7.2.2 The package shall be marked legibly and indelibly with the following information:

- a) name of the product;
- b) weight of the product;
- c) producer's name and address or trademark;
- d) month and year of manufacture and lot identification or code; and
- e) country of origin.

8. Certification

8.1 Each product, may be the arrangement with a recognised certification body, be marked with the certification mark of that body, provided the product conforms to the requirement of the Malaysian Standard.

8.2 The product may be certified *Halal* by a recognised authority.

9. Sampling and testing

Representative samples of the product shall be drawn according to the method prescribed in MS 1231 and the sample shall be prepared according to MS 817: Part 1. Tests shall be carried out according to the methods prescribed in the related series of MS 817.

10. Compliance

10.1 Upon testing, when each of the samples is found to conform to the requirements specified in this standard, the lot, batch or consignment from which the samples have been drawn shall be deemed to comply with this Malaysian Standard.

10.2 In this context, the term 'sample' shall be taken to include also 'composite sample or samples' where appropriate as agreed upon mutually between seller and buyer.

11. Legal requirements

The product, in all other aspects, shall comply with the requirements of the legislation currently in force in Malaysia.

Acknowledgements

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