

**NATIONAL AGENCY FOR FOOD AND DRUG ADMINISTRATION AND CONTROL (NAFDAC)**

**FATS AND OILS REGULATIONS 2018**

**COMMENTS ARE WELCOMED FROM STAKEHOLDERS WITHIN 60 DAYS.**

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**Commencement:**

**In exercise of the powers conferred on the Governing Council of the National Agency for Food and Drug Administration and Control (NAFDAC) by Sections 5 and 30 of the NAFDAC Act Cap N1 LFN 2004 and Section 12 of the Food, Drugs and Related Products (Registration, Etc.) Act Cap F33 LFN 2004 and of all the powers enabling it in that behalf, THE GOVERNING COUNCIL OF THE NATIONAL AGENCY FOR FOOD AND DRUG ADMINISTRATION AND CONTROL with the approval of the Honourable Minister of Health hereby makes the following Regulations:-**

1. **Scope**

All packaged fats and oils manufactured, imported, exported, advertised, sold or distributed in Nigeria shall be registered in accordance with the provisions of these Regulations.

1. **Prohibition**

No person shall manufacture, package, import, export, advertise, distribute, sell or use packaged fats and oils as specified in First Schedule to these Regulations in Nigeria unless, it has been registered in accordance with the provision of these Regulations.

1. **Vitamin A Fortification**

No person shall manufacture, package, import, export, advertise, distribute or sell any vegetable oil as specified in Schedule I to these Regulations, unless, it is fortified with Vitamin A to a level not below 20,000 I.U./kg.

1. **Source**
   1. Edible fats and oil shall be sourced from vegetable and animal origin and may contain amounts of other lipids as phosphatides, unsaponifiable matter and free acids naturally present in the fats and oils.
   2. Fats of animal origin shall be produced from animal in good health at the time of slaughter and certified fit for human consumption by appropriate authority.
   3. Vegetable oils shall be derived from the botanical source after which they are named and indicated under the regulations for individual oils.
2. **Additives.**
   1. Edible fats and oils may contain additional permitted colours as long as the added colours do not deceive or mislead the consumer by concealing damage or low quality or by making the products appear to be greater than their value.
   2. Edible fats and oils may contain approved natural flavours and their identical synthetic equivalents and other approved synthetic flavours for the purpose of restoring natural flavours, as long as the added flavours do not deceive or mislead the consumer by concealing damage or low quality by making the products appear to be greater than their actual value.
   3. Edible fats and oils may contain permitted preservatives, antifoaming agent and crystallization inhibitor, the use and limits of which shall be as prescribed in the seventh Schedule to these Regulations, provided that, the fats and oils shall not contain any food additives or food colours when sold as virgin fats and oils.
3. **Impurities** 
   1. No person shall sell, import, export, produce, market, store or distribute to the public, edible fats and oils that contain impurities such as;
      1. Heavy metals;
      2. Petroleum products;
      3. Foreign particles or any other substance not indicated in the list of additives for this category of food; and
      4. Naturally occurring impurities e.g. Gossypol.
   2. No edible fats and oils shall contain any foreign matter or have rancid odour or taste.
4. **Labelling of Fats and Oils**
   1. In addition to compliance with the Pre-Packaged Food (Labelling) Regulations 2018, the following shall apply:-
      1. A refined oil obtained from a single botanical source, shall in addition to the trade name and the specific name of the one oil present, be so indicated on the label; for example "Refined Sunflower Seed Oil”;
      2. A refined oil obtained from multi botanical sources, where two or more oils are blended together, shall be so indicated on the label provided that the specific names of the oils are listed in the list of ingredients; for example “Refined Sunflower Seed Oil Blend” or “Refined Vegetable Oil Blend”
      3. No person shall sell a mixture of animal fat and vegetable fat unless the label of that mixture carries the declaration "Contains Animal Fats";
      4. The label of a container in which margarine is packed shall, on the principal display panel, legibly and very conspicuously bear the word, “MARGARINE”.
5. **Classification, definition and specification of fats and oils**
   1. Classification, definition and specification of fats and oils, composition and quantity factors of various types of oils and fats and permitted additives are stated in Schedules as follows –
      1. classifications, definitions and specifications of Fats and Oils in the First Schedule;
      2. composition and quality factors of Arachis Oil in the Second Schedule;
      3. composition and quality factors of Cotton Seed Oil in the Third Schedule;
      4. composition and quality factors of Maize Oil in the Fourth Schedule;
      5. composition and quality factors of Mustard Seed Oil in the Fifth Schedule;
      6. composition and quality factors of Olive Oil in the Sixth Schedule;
      7. composition and quality factors for Low Erucic Acid Rapeseed Oil in the Seventh Schedule;
      8. composition and quality factors for Safflower Seed Oil in the Eight Schedule;
      9. composition and quality factors of Sesame Seed Oil in the Ninth Schedule;
      10. composition and quality factors of Soya bean Oil in the Tenth Schedule;
      11. composition and quality factors of Sunflower Seed Oil in the Eleventh Schedule;
      12. composition and quality factors of Palm Oil in the Twelfth Schedule;
      13. composition and quality factors of Refined Oil in the Thirteenth Schedule;
      14. composition and quality factors of Lard in the Fourteenth Schedule;
      15. composition and quality factors of Edible Tallow in the Fifteenth Schedule;
      16. essential composition and quality factors of Margarine in the Sixteenth Schedule; and
      17. Permitted additives in the Seventeenth Schedule.
6. **Penalty.**
   1. Any person who contravenes any of the provisions of these Regulations shall be guilty of an offence and liable on conviction in the case of:-
      1. an individual, to imprisonment for a term not exceeding one year or to a fine not exceeding ~~N~~50,000 or to both imprisonment and fine; and
      2. a body corporate, to a fine not exceeding ~~N~~100, 000.
   2. Where an offence under these Regulations is committed by a body corporate, firm or other association of individuals, every :-
      1. director, manager, secretary or other similar officer of the body corporate; or
      2. partner or officer of the firm; or
      3. trustee of the body concerned; or
      4. person concerned in the management of the affairs of the association ; or
      5. person who was purporting to act in a capacity referred to in paragraphs (a) to (d) of this regulation is severally guilty of that offence and liable to be proceeded against and punished for that offence in the same manner as if he had himself committed the offence unless he proves that the act or omission constituting the offence took place without his knowledge, consent or connivance.
7. **Forfeiture.**

In addition to the penalty specified in Regulation 7 of these Regulations, a person convicted of an offence under these regulations shall forfeit the fats and oils and whatsoever is used in connection with the commission of the offence.

1. **Interpretation.**

In these Regulations unless the context otherwise requires:-

1. **“Animal fats”** means the fats entirely rendered from fresh, clean, sound fatty tissue ofhealthy animal at the time of slaughter and fit for human consumption as certified by a competent appropriate authority and they may contain additives and limits of which shall be as prescribed in Seventeenth Schedule to these Regulations;
2. **“Edible fats and oils”** means foods which are composed of glycerides of fatty acids usedfor direct consumption, catering purpose or as ingredients in the manufacture of products and they include oils and fats that have been subjected to process of modification while some crude fat and oil shall be subjected to further processing in order to render them suitable for human consumption;
3. **“Refined fat or oil”** means product that has been subjected to a process of purificationand neutralization and may be, depending on the virgin oils, subjected to a process of de-colourization, deodorization and winterization;
4. **“Virgin oils”** means edible fats and oils obtained by mechanical procedures andthe application of heat only and they may have been purified by washing with water, settling, filtering and centrifuging only.
5. “**Extra virgin oils”** may be used for virgin olive oils provided they are cold pressed, do not contain any refined olive oil and possess superior sensory characteristics and quality based on chemical composition with free acidity, expressed as oleic acid, of not more than 0.8 grams per 100 grams and whose other characteristics correspond to those applicable international standards for this category.
6. **“Cold pressed fats and oils”** means edible vegetable fats and oils obtained by mechanical procedures, without altering the oil, e.g. expelling or pressing, without the application of heat. They may have been purified by washing with water, settling, filtering and centrifuging only.
7. **Repeal**

The Fats and Oils Regulations 2005 is hereby repealed.

1. **Citation.**

These Regulations shall be cited as Fats and Oils Regulations 2005.

**SCHEDULES**

**FIRST SCHEDULE**

**CLASSIFICATIONS, DEFINITIONS AND SPECIFICATIONS OF FATS AND OILS**

1. **Arachis Oil**

Arachis Oil (Peanut Oil) shall be derived from groundnuts (the seed of *Arachis Hypogaea. L*), and shall have the composition and quality factors specified in Second Schedule to these Regulations.

1. **Cotton Seed Oil**

Cotton Seed Oil shall Cotton Seed Oil shall be derived from the seed of various cultivated species of Gossypium, and shall have the composition and quality factors specified in Third Schedule to these Regulations.

1. **Maize Oil**

Maize oil shall be derived from germ (the embryo of Zea Mays L.) and shall have the composition and quality factors specified in Fourth Schedule to these Regulations.

1. **Mustard Seed Oil**

Mustard seed oil shall be derived from the seed of the white mustard (*Sinapis Alba* L Synonym: Brassica Hirta, *Moench,* the brown mustard (*Brassica Nigra L*) (*zein and Coss*), and of the black mustard (*Brassica Nigra L*) and shall have the composition and quality factor specified in Fifth Schedule to these Regulation

1. **Olive Oil**

Oilve oil shall be the oil obtained from the fruit of the olive tree (Olea Europaea L) and shall have the composition and quality factors specified in Sixth Schedule to these regulations.

1. **Rapeseed Oil**

Rapeseed oil (turnip rape oil, colza oil, ravision oil, sarson, oil, toria oil), shall be derived from the seeds of Brassica Competris L, Brassica Napus L and Brassica Tourneforthi Gouan, and shall have the composition and quality factors specified in Seventh Schedule to these Regulations.

1. **Safflower Seed Oil**

Safflowered oil (safflower oil, carthamus oil, kundee oil) shall be derived from safflower seeds (the seeds of carthamus tinctorius L) and shall have the composition and quality factors specified in Eight Schedule to these Regulations

1. **Sesame Seed Oil**

Sesamesed oil, (Sesame oil, ginger oil, bene oil, till oil shall be derived from Sesame seeds (the seeds of Sesamum Indicum L), and shall have the composition and quality factors specified in Nineth Schedule to these Regulations.

1. **Soya Bean Oil**

Soya bean oil (Soyabean oil) shall be derived from Soya beans (the seeds of Glycine max L Merr), and shall have the composition and quality factors specified in Tenth Schedule to these Regulations.

1. **Sunflower Seed Oil**

Sunflower seed oil (sun-flower oil shall be derived from sunflower seeds (the seed of Helianthus Annuns L), and shall have the composition and quality factors specified in Eleventh Schedule to these Regulations.

1. **Palm Oil**

Palm oil shall be the liquid derived from the ocelot pulp of the fruit of the oil palm (Elaeis Guineesis) and shall have the composition and quality factors specified in Twelveth Schedule to these Regulations

1. **Refined Oil or a Mixture of Refined Oils**

Refined oil or a mixture of refined oils, shall have the composition and quality factors set out in Thirteenth Schedule to these Regulations.

1. **Lard**

Lard shall be the fat render from fresh, clean, sound, fatty tissues from swine (*Suis Scrofa*). The tissue shall not include bones, detached skin, head skin, ears, tails, organs windpipes, large blood vessels, scrap fat, skimmings, settling, pressings and the like and shall reasonably be free from foreign odours and tastes and, when subjected to processing may, as long as it is so declared on the label , in a descending order of proportion contain refined lard, lard stearine and hydrogenated lard, and shall the composition and quality factors specified in Fourteenth Schedule to these Regulations.

1. **Edible Tallow**

Edible Tallow (dripping) shall be the product obtained by rendering the clean, sound, fatty tissue (including trimming and cutting fats) attendant muscles and bones of bovine animal (*Bos Taurus*) or sheep (*Ovis Aries*). It shall have its characteristics, odour and taste, and be free from foreign odour and taste. It shall have the composition and quality factors specified in Fifteenth Schedule to these Regulations.

1. **Shortening**

Shortening, other than butter or lard shall be the food prepared from fats, oils or a combination of fats and oils, may be processed by hydrogenation and may contain a preservative, antifoaming agent, stearyl, monoglyceridyl citrate and other emulsifying agent, the use and limits of all which shall be as prescribed by the agency.

1. **Margarine**

Margarine shall mean the product of emulsification of edible oils and fats, with water or skimmed milk or other substances with or without the addition of colouring matter capable of being used for the same purpose as butter. It may contain preservatives, emulsifying agents, the use and limit of which shall be prescribed in the approved list of additives. Margarine shall contain not less than 80 per centum of fat; not more than 16 per centum of water; not more than 10 per centum of milk fat; not less than 26,000 and not more than 33,000 international units per kilogram of vitamin A; not less than 28,000 and not more than 33,000 international units per kilogram of vitamin D. It shall have the composition and quality factors specified in Sixteenth Schedule to these regulations.

Low Fat Margarine shall\*\*\*\*\*

**SECOND SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF ARACHIS OIL**

Relative Density (20oC/Water at 20oC) - 0.912 – 0.920

Refractive Index at (400C) - 1.460 – 1.465

Saponification Value (mg KOH/g Oil) - 187 – 196

Iodine Value (Wijs) - 68 – 107

Unsaponification matter - not more than 10g/kg

Arachidic and higher fatty acids - not less than 48g/kg

Acid Value:

* Virgin Oil - not more than 4mg KOH/g
* Non-Virgin Oil - not more than 0.6mg KOH/g

Peroxide Value - not more than 10 millequivqlents

Peroxide oxygen 1kg oil

Insoluble Impurities - not more than 0.05% (m/m)

Matter volatile at 105oC - not more than 0.2% (m/m)

Soap Content - not more than 0.05% (m/m)

**THIRD SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF COTTON SEED OIL**

Relative Density (20oC/Water at 20oC) - 0.918 - 0.926

Refractive Index at (40oC) - 1.458 - 1.466

Saponification Value (mg KOH/g Oil) - 189 – 198

Iodine Value (Wijs) - 100 – 123

Unsaponificable matter - not more than 15g/kg

Halphen test - Positive

Acid Value - not more than 0.6mg KOH/g Oil

Peroxide Value - not more than 10 milliequivalents

peroxide oxygen per kilogram

Insoluble impurities - not more than 0.05% (m/m)

Matter volatile at 105oC - not more than 0.2% (m/m)

Soap Content - not more than 0.005 (m/m).

**FOURTH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF MAIZE OIL**

Relative Density (20oC/Water at 20oC) - 0.917 - 0.925

Refractive Index at (40oC) - 1.465 - 1.468

Saponification Value (mg KOH/g Oil) - 187 – 195

Iodine Value (Wijs) - 103 – 135

Unsaponificable matter - not more than 28g/kg

Acid Value:

* Virgin Oil - not more than 4mg KOH/g
* Non-Virgin Oil - not more than 0.6mg KOH/g

Peroxide Value - not more than 10 milliequivalents

peroxide oxygen per kg of oil

Matter volatile at 105oC - not more than 0.2% (m/m)

Insoluble impurities - not more than 0.05% (m/m)

Soap Content - not more than 0.005 (m/m)

Rancidity (Krest Test) - Negative

Mineral Oil Test - Negative

**FIFTH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF MUSTARD OIL**

Relative Density (20oC/Water at 20oC) - 0.910 - 0.921

Refractive Index at (40oC) - 1.461 - 1.469

Saponification Value (mg KOH/g Oil) - 168 – 184

Iodine Value (Wijs) - 92 – 125

Unsaponificable matter - not more than 15g/kg

Allyl Isollnocyanate Content - not less than 4g/kg

Acid Value:

* Virgin Oil - not more than 4mg KOH/g
* Non-Virgin Oil - not more than 0.6mg KOH/g

Peroxide Value - not more than 10 milliequivalents

peroxide oxygen /kg oil

Matter volatile at 105oC - not more than 0.2% (m/m)

Insoluble impurities - not more than 0.05% (m/m)

Soap Content - not more than 0.005 (m/m).

Rancidity Index (Krest Test) - Negative

Mineral Oil Test - Negative

**SIXTH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF OLIVE OIL**

Relative Density (20oC/Water at 20oC) - 0.910 - 0.916

Refractive Index at (40oC) - 1.4677 - 1.4705

Saponification Value (mg KOH/g Oil) - 181 – 196

Iodine Value (Wijs) - 75 - 94

Unsaponificable matter:

* Virgin Oil - not more than 15mg/kg
* Non-Virgin Oil - not more than 15mg/kg

Bellier Index - not more than 17

Semi-Siccative Oil Test - negative

Olive - Pomace Oil Test - negative

Cotton Seed Oil Test - negative

Teaseed Oil Test - negative

Sesame seed Oil Test - (Per cent of the sum of beta-silosterol

Sterol Content - Camesterol and stihmasterol

Beta-sitosterol - 93

Campesterol - 4.0

Cholesterol - 0.5

Acid Value: not more than 20 milligrams equivt.

Virgin Oil - KOH/ gram oil 0.6mg KOH/gram

Non-virgin Oil - not more than 20 milligrams equivt

Peroxide Value: peroxide oxygen /kg

Virgin Oil - 10 milliequvalent peroxide

Refined virgin Oil - oxygen/kg

Matter Volatile at 1050C - not more than 0.2% (m/m)

Insoluble impurities - not more than 0.1% (m/m)

Soap Test - negative

Saturated Fatty acids at Positions 2: Maximum Level

Virgin Olive Oil - 1.5% (m/m)

Refined Oil - 1.8% (m/m)

\*Saturated Fatty acid at position 2

means the sum of the palmitic (16.0)

and stearic (18.0) acids expressed as a

percentage (m/m) of the total fatty

acids at position 2.

Free Acidity (expressed as oleic acid): Maximum Level

Virgin Olive Oil - 3.3

Refined Olive Oil - 0.3

Food Additive: Maximum Level

Virgin Olive Oil - not permitted

Refined Olive Oil - Tocopherol for the purpose of restoring

Natural tocopherol lost in processing (200mg/kg)

**Contaminants**

**Insoluble Impurities:**

Virgin Olive Oil - 0.1% (m/m)

Refined Olive Oil - 0.05% (m/m)

**SEVENTH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS FOR LOW ERUCIC ACID REPESEED OIL**

Relative Density (20oC/Water at 20oC) - 0.914 - 0.920

Refractive Index at (40oC) - 1.467 - 1.470

Saponification Value (mg KOH/g Oil) - 182 – 193

Iodine Value (Wijs) - 110 – 126

Crisomer Value - 67 – 70

Unsaponificable matter - not more than 20g/kg

Brassicasterol - not less than 5% of total sterol

Erucic Acid - not more than 5% (m/m) of the

component fatty acids.

Acid Value - not more than 0.6mg KOH/g oil

Peroxide value - not more than 10 milliequivalents

Peroxide oxygen/kg oil.

**EIGHTH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF SAFFLOWER SEED OIL**

Relative Density (20oC/Water at 20oC) - 0.922 - 0.927

Refractive Index at (40oC) - 1.467 - 1.470

Saponification Value (mg KOH/g Oil) - 186 – 198

Iodine Value (Wijs) - 135 – 150

Unsaponificable matter - not more than 15g/kg

Acid Value - not more than 0.6mg KOH/g Oil

Peroxide Value - not more than 10 milliequivalents

peroxide oxygen per kilogram

Matter volatile at 105oC - not more than 0.2% (m/m)

Insoluble impurities - not more than 0.05% (m/m)

Soap Content - not more than 0.005 (m/m)

Rancidity (Krest Test) - negative

Mineral Oil Test - negative

**NINETH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF SESAME SEED OIL**

Relative Density (20oC/Water at 20oC) - 0.915 - 0.923

Refractive Index at (40oC) - 1.465 - 1.469

Saponification Value (mg KOH/g Oil) - 187 – 195

Iodine Value (Wijs) - 104 – 120

Unsaponificable matter - not more than 15g/kg

Sesame Oil Test (Baudouin) - positive

Acid Value:

* Virgin Oil - not more than 0.6mg KOH/g Oil
* Non-virgin oil - not more than 0.6mg KOH/g oil

Peroxide Value: - not more than 10 milliequivalents

peroxide oxygen per kilogram

Matter volatile at 105oC - not more than 0.05% (m/m)

Insoluble impurities - not more than 0.005% (m/m)

Soap Content - not more than 0.005 (m/m)

Rancidity (Krest Test) - negative

Mineral Oil Test - negative

**TENTH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF SOYA BEAN OIL**

Relative Density (20oC/Water at 20oC) - not less than 0.919 and

not more than 0.925

Refractive Index at (40oC) - 1.466 - 1.470

Saponification Value (mg KOH/g Oil) - 189 – 195

Iodine Value (Wijs) - 120 – 143

Unsaponificable matter - not more than 15g/kg

Acid Value - not more than 0.6mg KOH/g Oil

Peroxide Value - not more than 10 milliequivalents

peroxide oxygen per kilogram

Matter volatile at 105oC - not more than 0.2% (m/m)

Insoluble impurities - not more than 0.05% (m/m)

Soap Content - not more than 0.005 (m/m)

**ELEVENTH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF SUNFLOWER SEED OIL**

Relative Density (20oC/Water at 20oC) - 0.918 - 0.923

Refractive Index at (40oC) - 1.467 - 1.469

Saponification Value (mg KOH/g Oil) - 188 – 194

Iodine Value (Wijs) - 110 – 143

Unsaponificable matter - not more than 15g/kg

Acid Value:

* Virgin Oil - not more than 0.6mg KOH/g Oil
* Non-virgin oil - not more than 0.6mg KOH/g oil

Peroxide Value: - not more than 10 milliequivalents

peroxide oxygen per kilogram

Matter volatile at 105oC - not more than 0.2% (m/m)

Insoluble impurities - not more than 0.05% (m/m)

Soap Content - not more than 0.005 (m/m)

**TWELVETH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF PALM OIL**

Relative Density (20oC/Water at 20oC) - 0.891 – 0.899

Refractive Index at (40oC) - 1.449 – 1.456

Saponification Value (mg KOH/g Oil) - 190 – 209

Iodine Value (Wijs) - 50 – 55

Unsaponificable matter - not more than 12g/kg

Acid Value:

* Virgin Oil - not more than 0.6mg KOH/g Oil
* Non-virgin oil - not more than 0.6mg KOH/g oil

Peroxide Value: - not more than 10 milliequivalents

peroxide oxygen per kilogram

Total Carolenoids in Red Palm Oil - 500mg/kg – 200mg/kg calculated

as beta carotene

Contaminants: Maximum Level

Matter volatile at 105oC - 0.2% (m/m)

Insoluble impurities - 0.05% (m/m)

Soap Content - 0.005% (m/m)

Iron (Fe):

* Virgin Oil - 5.0mg/kg
* Non-virgin Oil - 1.5mg/kg

Lead (Pb) - 01.mg/kg

Arsenic (As) - 0.1mg/kg

**THIRTEENTH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF REFINED OIL**

Acid Value - not more than 0.6mg KOH/g oil

Peroxide Value - not more than 10 milliequivalents

peroxide oxygen per kilogram

Matter volatile at 105oC - not more than 0.5% (m/m)

Insoluble impurities - not more than 0.05% (m/m)

Soap Content - Nil

**FOURTEENTH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF LARD**

Relative Density (20oC/Water at 20oC) - 0.896 - 0.904

Refractive Index at (40oC) - 1.448 - 1.460

Titre (0C) - 32 -45

Saponification Value (mg KOH/g Oil) - 192 -203

Iodine Value (Wijs) - 45 -70

Unsaponificable matter - not more than 10g/kg

Acid Value - not more than 1mg KOH/g fat

Peroxide Value - not more than 10 milliequivalents

peroxide oxygen per kilogram fat

Matter volatile at 105oC - not more than 0.3% (m/m)

Insoluble impurities - not more than 0.05% (m/m)

Soap Content - Nil

**FIFTEENTH SCHEDULE**

* + - 1. **COMPOSITION AND QUALITY FACTORS OF EDIBLE TALLOW**

Relative Density (20oC/Water at 20oC) - 0.893 - 0.904

Refractive Index at (40oC) - 1.448 - 1.460

Titre (0C) - 40 -49

Saponification Value (mg KOH/g Oil) - 190 -202

Iodine Value (Wijs) - 32 -50

Unsaponificable matter - not more than 12gm/kg oil

Acid Value - not more than 1mg KOH/g fat

Peroxide Value - not more than 10 milliequivalents

peroxide oxygen per kilogram fat

Matter volatile at 105oC - not more than 0.3% (m/m)

Insoluble impurities - not more than 0.05% (m/m)

Soap Content - not more than 0.05% (m/m)

**SIXTEENTH SCHEDULE**

* + - 1. **ESSENTIAL COMPOSITION AND QUALITY FACTORS OF MARGARINE**
  1. Margarine shall be made of edible fats and/or oils or mixtures of these, whether or not they have been subjected to a process of modification.
  2. May contain water and/or milk and/or milk products.
  3. Minimum fat content 80%m/m Essential

Maximum water content 16%m/m Composition

* 1. ***Additions***

The following substances may be added to margarine:

* + Vitamin A and its esters
  + Vitamin D
  + Vitamin E and its esters
  + Other vitamins
  + Sodium Chloride
  + Sugar/any carbohydrate sweetening matter
  + Suitable edible proteins
  1. ***Colours*** ***Maximum Level***

Beta – Carotene 25mg/kg

Annatto Extracts 20mg/kg calculated as total Bixin or nor-bixin

Carcumin or Tumericq 5mg/kg calculated as total Curcumint.

Beta-apo-8' Cartotenol 25mg/kg

Methyl and Ethyl Esters

of Apo-8' Carotenoic Acid 25mg/kg

* 1. ***Flavours***

Natural flavours, their identical synthetic equivalents, other synthetic flavours approved by the agency for the purpose of restoring natural flavour lost in processing or for the purpose of standardizing flavour can be added as long as the added flavour does not deceive or mislead the consumer by concealing damage or low quality or by making the product appear to be greater than actual value.

* 1. ***Emulsifiers Maximum Level***

Mono and Diglycerides of fatty Acids Limited by GMP

Esterified with the following acids 10g/kg

Acetic 10g/kg

Acetyltartaric 10g/kg

Citric 10g/kg

Lactric 10g/kg

Tartaric 10g/kg

And their sodium and calcium slats

National and Synthetic Decopherols

Vitamin E 500mg/kg

Ascorbyl Palmtate 500mg/kg

Ascorbyl Stearate individually or in combination

Dilanryl Thiodipropionate 200mg/kg

* 1. ***Antio-oxidant Synergists***

Citric Acid Limited by GMP

Sodium Citrate Limited by GMP

Laopropyl Citrate Mixture 100mg/kg individually

Phosphoric acid or in combination

Moniglycerid Citrate

* 1. ***Acidity Regulators***

Citric and Lactic Acids and Limited by GMP

their potassium

L. Tartaric acid and its sodium and Limited by GMP

Sodium/Potassium salts.

* 1. ***Anti-foaming Agent***

Dimethyl Polysiloxane 10mg/kg

(Dimethyl Silicone) singly or in

Combination with silicone dioxide

* 1. ***Contaminants***

Iron (Fe) 1.5mg/kg

Copper (Cu) 0.1mg/kg

Lead (Pb) 0.1mg/kg

Arsenic (As) 0.1mg/kg

**SEVENTEENTH SCHEDULE**

* + - 1. **PERMITTED ADDITIVES**
         1. **COLOURS**

The following colours are permitted for the purpose of restoring natural colour lost in processing or for the purpose of standardizing colour, as long as the added colour does not deceive or mislead the consumer by concealing damage or low quality or by making the product appear to be of greater than actual value.

***Colour Maximum Level***

Beta-Carotene - 25mg

Annatto Extracts - 20mg/kg (calculated as total bixin orbixin)

Curcumin or Tumeric - 5mg/kg (calculated as total curcumin)

Beta-apo-8' Carotenal - 25mg/kg

Methyl and Ethyl Ester of Bet

a-apo-8' Carotenoic Acid - 25mg/kg

* + - * 1. **FLAVOURS**

Natural flavours, their identical equivalents, and other synthetic flavours approved by the Agency for the purpose of restoring natural flavour lost in processing or for the purpose of standardizing flavour, as long as the added colour does not deceive or mislead the consumer by concealing damage or low quality or by making the product appear to be of greater than actual value.

**ANTIOXIDANTS Maximum Level**

Propyl Gallate - 100mg/kg

Butylated hydroxytoluene (BHT) - 75mg/kg

Butylated hydroxyanisole (BHA) - 175mg/kg

Any combination of Propyl Gallate BHT, BHA - 200mg/kg. The limit of each

should not exceed maximum level permitted as stated

Natural and Synthetic tocopherol - 500mg/kg

Ascorbyl Palmate ) - 500mg/kg individually or

Ascorbyl Palmate ) in combination

Dilanryl Thiodipropionate - 200mg/kg

**ANTIOXIDANT**

**SYNERGISTS Maximum Level**

Citric Acid - Limited by GMP

Sodium Citrate "

Isopropyl Citrate Mixture ) - 100mg/kg individually or

Phosphoric Acid Monoglyceride Citrate ) - in combination

**ACIDITY REGULATORS Maximum Level**

Citric and Lactic Acid and their potassium and - GMP

Sodium salts

L-Tartaric Acid and its sodium and sodium/ - GMP

Potassium salts.

**ANTI-FOAMING AGENT Maximum Level**

Dimethyl Polysiloxane (dimethyl silicone

singly or in combination with silicone dioxide - 10mg/kg

**CRYSTALLIZATION INHIBITOR**

Oxystearin - 1.250mg/kg

**CONTAMINANTS**

Matter volatile at 1050C - 0.2% (m/m)

Insoluble Impurities - 0.05% (m/m)

Soap Content - 0.005% (m/m)

Iron (Fe) - 1.5mg/kg (m/m)

Copper (Cu) - 0.1mg/kg

Lead (Pb) - 0 1mg/kg

Arsenic (As) - 0.1mg/kg

**MADE** at Abuja this day of 2018

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**DR. ANDEM NYONG ANDEM**

***Chairman Governing Council***

***National Agency for Food and Drug Administration***

***and Control (NAFDAC)***