CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

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CX 5/15 **CL 2010/31-FO**
July 2010

TO: Codex Contact Points
Interested International Organizations

FROM: Secretariat, Codex Alimentarius Commission
Joint FAO/WHO Food Standards Programme
FAO, 00153 Rome, Italy

SUBJECT:
- **Draft amendment to the Code of Practice for the Storage and Transport of Edible Fats and Oils in Bulk: Criteria to assess the acceptability of substances for inclusion in a list of acceptable previous cargoes**
- **Draft Amendment to the Standard for Named Vegetable Oils: Palm Kernel Olein and Palm Kernel Stearin**

DEADLINE: **15 November 2010**

COMMENTS:

To:

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Copy to:

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The 21st Session of the Committee on Fats and Oils agreed to advance to Step 5 for adoption by the 32nd Session of the Codex Alimentarius Commission the Proposed Draft Amendment to the *Code of Practice for the Storage and Transport of Edible Fats and Oils in Bulk*: *Proposed Draft Criteria to assess the acceptability of substances for inclusion in a list of acceptable previous cargoes* (ALINORM 09/32/17, para. 55 and Appendix III.) and the Proposed Draft Amendment to the Standard for Named Vegetable Oils (inclusion of palm kernel olein and palm kernel stearin) (para. 85, Appendix IV).

The 32nd Session of the Codex Alimentarius Commission adopted both texts at Step 5 (ALINORM 09/32/REP, para. 83-86 and Appendix IV) and they are hereby circulated at Step 6 (see **Annexes 1** and **2**).

Governments and international organizations wishing to submit comments at Step 6 should do so in writing (preferably by electronic file) to the above addresses **by 15 November 2010**.

DRAFT AMENDMENT TO THE RECOMMENDED INTERNATIONAL CODE OF PRACTICE FOR THE STORAGE AND TRANSPORT OF EDIBLE FATS AND OILS IN BULK

(At Step 6 of the Procedure)

2.1.3 Contamination

Undesirable contamination may be from residues of a previous material handled in the equipment, dirt, rain, sea water or through the accidental addition of a different product. In storage installations and ships, particular difficulty may be experienced ensuring cleanliness of valves and pipelines, particularly where they are common for different tanks. Contamination is avoided by good design of the systems, adequate cleaning routines and an effective inspection service, and on ships by the carriage of oils in segregated tank systems in which the previous cargoes are included in the Codex List of Acceptable Previous Cargoes at Appendix 2 of this Code.

Contamination is also avoided by the rejection of tanks which have carried as a last cargo products which are included on the Codex List of Banned Immediate Previous Cargoes at Appendix 3 of this Code.

Previous cargoes not on the Codex Lists of Acceptable or Banned cargoes are only to be used if agreed upon by competent authorities of the importing countries.

Until both lists are completed, practitioners may find the lists and data referred to in the Bibliography at Appendix 4 provide relevant guidance.

When determining whether a substance is acceptable as an immediate previous cargo, competent authorities should consider the following criteria:

1	**The substance is transported/stored in an appropriately designed system; with adequate cleaning routines, including the verification of the efficacy of cleaning between cargoes, followed by effective inspection and recording procedures.**
2	**Residues of the substance in the subsequent cargo of fat or oil should not result in adverse human health effects. The ADI (or TDI) of the substance should be greater than or equal to 0.1 mg/kg bw/day. Substances for which there is no numerical ADI (or TDI) should be evaluated on a case by case basis.**
3	**The substance should not be or contain a known food allergen, unless the identified food allergen can be adequately removed by subsequent processing of the fat or oil for its intended use.**
4	**Most substances do not react with edible fats and oils under normal shipping and storage conditions. However, if the substance does react with edible fats and oils, any known reaction products must comply with criteria 2 and 3.**

DRAFT AMENDMENT TO THE STANDARD FOR NAMED VEGETABLE OILS PALM KERNEL OLEIN AND PALM KERNEL STEARIN (N09-2007)

(At Step 6 of the Procedure)

2. DESCRIPTION

2.1 Product definitions

2.1.9 **Palm kernel olein** is the liquid fraction derived from fractionation of palm kernel oil (described above).

2.1.10 **Palm kernel stearin** is the solid fraction derived from fractionation of palm kernel oil (described above)

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.3 Slip point

Palm kernel olein between 21 to 26 °C

Palm kernel stearin between 31 to 34 °C

Table 1: Fatty acid composition of vegetable oils as determined by gas liquid chromatography from authentic samples[1] (expressed as percentage of total fatty acids) (*see* Section 3.1 of the Standard)

Fatty acid	Palm kernel olein[2]	Palm kernel stearin[2]
C6:0	0.0-0.6	ND-0.1
C8:0	2.9-5.4	1.5-3.0
C10:0	2.9-4.5	2.5-3.0
C12:0	39.7-46.5	52.0-59.0
C14:0	11.5-15.5	20.0-25.0
C16:0	7.1-10.6	7.2-9.2
C16:1	ND-0.1	ND
C17:0	ND	ND
C17:1	ND	ND
C18:0	1.8-3.0	1.0-2.5
C18:1	14.6-24.6	4.5-8.0
C18:2	2.6-4.3	0.5-1.5
C18:3	ND-0.3	ND
C20:0	ND-0.5	ND-0.5
C20:1	ND	ND
C20:2	ND	ND
C22:0	ND	ND
C22:1	ND	ND
C22:2	ND	ND
C24:0	ND	ND
C24:1	ND	ND

[1] Data taken from species as listed in Section 2.
[2] Fractioned Product from palm kernel oil.

APPENDIX

OTHER QUALITY AND COMPOSITIONAL FACTORS

1. Quality Characteristics

		Maximum level
1.5	**Iron (Fe):**	
	Refined oils	1.5 mg/kg
	Virgin oils	5.0 mg/kg
	Palm kernel stearin	7.0 mg/kg

Table 2: Chemical and physical characteristics of crude vegetable oils (see Appendix of the Standard)

	Palm kernel olein[2]	**Palm kernel stearin[2]**
Relevant density (xºC/water at 20ºC)	0.906-0.909 x=40ºC	0.902-0.908 x=40ºC
Apparent density (g/ml)	0.904-0.907	0.904-0.906
Refractive index (ND 40ºC)	1.451-1.453	1.449-1.451
Saponification value (mg KOH/g oil)	231-244	244-255
Iodine value	20-28	4-8.5
Unsaponifiable matter (g/kg)	<15	< 15

Table 3: Levels of desmethylsterols in crude oils from authentic samples[1] as a percentage of total sterol (see Appendix 1 of the Standard)

	Palm kernel olein[2]	**Palm kernel stearin[2]**
Cholesterol	1.5-1.9	1.4-1.7
Brassicasterol	ND-0.2	ND-2.2
Campesterol	7.9-9.1	8.2-9.7
Stigmasterol	13.4-14.7	14.1-15.0
Beta-sitosterol	67.1-69.2	67.0-70.0
Delta-5-avenasterol	3.3-4.6	3.3-4.1
Delta-7-stigmasterol	ND-0.6	ND-0.3
Delta-7-avenasterol	ND-0.5	ND-0.3
Others	2.9-3.7	1.0-3.0
Total sterols	816-1339	775-1086

ND – Non-detectable, defined as ≤0.05%

Table 4: Levels of tocopherols and tocotrienols in crude vegetable oils from authentic samples[1] (mg/kg) (see Appendix 1 of the Standard)

	Palm kernel olein[2]	Palm kernel stearin[2]
Alpha-tocopherol	ND-11	ND-10
Beta-tocopherol	ND-6	ND-2
Gamma-tocopherol	ND-3	ND-1
Delta-tocopherol	ND-4	ND
Alpha-tocotrienol	ND-70	ND-73
Gamma-tocotrienol	1-10	ND-8
Delta-tocotrienol	ND-2	ND-1
Total (mg/kg)	ND-90	ND-89

ND – Non-detectable.