

CODEx ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

E-mail: codex@fao.org - www.codexalimentarius.org

STANDARD FOR EDIBLE FATS AND OILS NOT COVERED BY INDIVIDUAL STANDARDS

CXS 19-1981

Formerly CAC/RS 19-1969. Adopted in 1981. Revised in 1987, 1999. Amended in 2009, 2013, 2015, 2017, 2019.

1. SCOPE

This Standard applies to oils and fats and mixtures thereof in a state for human consumption. It includes oils and fats that have been subjected to processes of modification (such as trans-esterification or hydrogenation) or fractionation.

This Standard does not apply to any oil or fat which is covered by one of the following:

- the Standard for Named Animal Fats;
- the Standard for Named Vegetable Oils;
- the Standard for Olive Oils and Olive-pomace Oils;
- the Standard for Fish Oils.

2. DESCRIPTIONS

- 2.1 Edible fats and oils** are foodstuffs defined in Section 1 which are composed of glycerides of fatty acids. They are of vegetable, animal or marine origin. They may contain small amounts of other lipids such as phosphatides, of unsaponifiable constituents and of free fatty acids naturally present in the fat or oil. Fats of animal origin must be produced from animals in good health at the time of slaughter and be fit for human consumption.
- 2.2 Virgin fats and oils** are edible vegetable fats and oils obtained, without altering the nature of the oil, by mechanical procedures, e.g. expelling or pressing, and the application of heat only. They may be purified by washing with water, settling, filtering and centrifuging only.
- 2.3 Cold pressed fats and oils** are edible vegetable fats and oils obtained, without altering the oil, by mechanical procedures, e.g. expelling or pressing, without the application of heat. They may have been purified by washing with water, settling, filtering and centrifuging only.

3. FOOD ADDITIVES

No additives are permitted in virgin or cold pressed oils covered by this Standard.

3.1 Colours

No colours are permitted in vegetable oils covered by this Standard.

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 inferiority or by making the product appear to be of greater than actual value:

INS No.	Additive	Maximum Use Level
100(i)	Curcumin	5 mg/kg
160a(ii)	<i>beta</i> -Carotenes (vegetable)	25 mg/kg
160a(i)	<i>beta</i> -Carotenes (synthetic)	25 mg/kg (Singly or in combination)
160a(iii)	<i>beta</i> -Carotenes (<i>Blakeslea trispora</i>)	
160e	<i>beta</i> -apo-8'-Carotenal	
160f	<i>beta</i> -apo-8'-Carotenoic acid, methyl or ethyl ester	
160b(i)	Annatto extracts, bixin-based	10 mg/kg (as bixin)

3.2 Flavourings

The flavourings used in products covered by this standard shall comply with the *Guidelines for the Use of Flavourings* (CXG 66-2008).

3.3 Antioxidants

INS N.o.	Additive	Maximum Use Level
304	Ascorbyl Palmitate	500 mg/kg (Singly or in combination)
305	Ascorbyl Stearate	
307a	Tocopherol, <i>d-alpha</i> -	300 mg/kg (Singly or in combination)
307b	Tocopherol concentrate, mixed	
307c	Tocopherol, <i>dl-alpha</i>	
310	Propyl gallate	100 mg/kg
319	Tertiary butyl hydroquinone (TBHQ)	120 mg/kg
320	Butylated hydroxyanisole (BHA)	175 mg/kg
321	Butylated hydroxytoluene (BHT)	75 mg/kg
Any combination of gallates, BHA, BHT, and/or TBHQ		200 mg/kg but limits above not to be exceeded

322(i)	Lecithin	GMP
389	Dilauryl thiodipropionate	200 mg/kg

3.4 Antioxidant synergists

INS No.	Additive	Maximum Use Level
330	Citric acid	GMP
331(i)	Sodium dihydrogen citrate	GMP
331(iii)	Trisodium citrate	GMP
332(ii)	Tripotassium citrate	GMP
333 (iii)	Tricalcium citrate	GMP
384	Isopropyl citrates	100 mg/kg (Singly or in combination)
472c	Citric and fatty acid esters of glycerol	

3.5 Anti-foaming agents (for oils and fats for deepfrying)

INS No.	Additive	Maximum Use Level
INS 471	Mono- and di-glycerides of fatty acids	GMP
900a	Polydimethylsiloxane	10 mg/kg

4. CONTAMINANTS

The products covered by this Standard shall comply with the Maximum Levels of the *General Standard for Contaminants and Toxins in Food and Feed* (CXS 193-1995).

4.1 Pesticide residues

The products covered by the provisions of this Standard shall comply with those maximum residue limits established by the Codex Alimentarius Commission for these commodities.

5. HYGIENE

It is recommended that the products covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the *General Principles of Food Hygiene* (CXC 1-1969), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

The products should comply with any microbiological criteria established in accordance with the *Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods* (CXG 21-1997).

6. LABELLING

The product shall be labelled in accordance with the *General Standard for the Labelling of Prepackaged Foods* (CXS 1-1985).

6.1 Name of the food

The designation "virgin fat" or "virgin oil" may only be used for individual fats or oils conforming to the definition in Section 2.2 of this Standard.

The designation "cold pressed fat" or "cold pressed oil" may only be used for individual fats or oils conforming to the definition in Section 2.3 of this Standard.

6.2 Labelling of non-retail containers

Information on the above labelling requirements shall be given either on the container or in accompanying documents, except that the name of the food, lot identification and the name and address of the manufacturer or packer shall appear on the container.

However, lot identification and the name and address of the manufacturer or packer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

APPENDIX**OTHER QUALITY AND COMPOSITION FACTORS**

These quality and composition factors are supplementary information to the essential composition and quality factors of the standard. A product, which meets the essential quality and composition factors but does not meet these supplementary factors, may still conform to the standard.

1. QUALITY CHARACTERISTICS**Colour:**

Characteristic of the designated product.

Odour and taste:

Characteristic of the designated product and free from foreign and rancid odour and taste.

	<u>Maximum level</u>
Matter volatile at 105°C:	0.2% m/m
Insoluble impurities:	0.05 % m/m
Soap content:	0.005 % m/m
Iron (Fe):	
Refined fats and oils	2.5 mg/kg
Virgin fats and oils	5.0 mg/kg
Cold pressed fats and oils	5.0 mg/kg
Copper (Cu):	
Refined fats and oils	0.1 mg/kg
Virgin fats and oils	0.4 mg/kg
Cold pressed fats and oils	0.4 mg/kg
Acid value:	
Refined fats and oils	0.6 mg KOH/g fat or oil
Virgin fats and oils	4.0 mg KOH/g fat or oil
Cold pressed fats and oils	4.0 mg KOH/g fat or oil
Peroxide value:	
Virgin oils and cold pressed fats and oils	up to 15 milliequivalents of active oxygen/kg oil
Other fats and oils	up to 10 milliequivalents of active oxygen/kg oil

2. METHODS OF ANALYSIS AND SAMPLING**Determination of acid value (AV)**

According to IUPAC 2.201 or ISO 660: 1996.

Determination of peroxide value (PV)

According to IUPAC 2.501 (as amended), AOCS Cd 8b - 90 (97) or ISO 3961: 1998.

Determination of matter volatile at 105°C

According to IUPAC 2.601 or ISO 662: 1998.

Determination of insoluble impurities

According to IUPAC 2.604 or ISO 663: 1999.

Determination of soap content

According to BS 684 Section 2.5.

Determination of iron

According to IUPAC 2.631, ISO 8294: 1994 or AOAC 990.05.

Determination of copper

According to IUPAC 2.631, ISO 8294: 1994 or AOAC 990.05.