

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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STANDARD FOR NAMED ANIMAL FATS

CODEX STAN 211 -1999

Adopted in 1999. Amendment: 2009, 2013 and 2015.

1. SCOPE

This Standard applies to the animal fats described in Section 2 presented in a state for human consumption.

2. DESCRIPTION

2.1 Lard

Pure rendered lard is the fat rendered from fresh, clean, sound fatty tissues from swine (*Sus scrofa*) in good health, at the time of slaughter, and fit for human consumption. The tissues do not include bones, detached skin, head skin, ears, tails, organs, windpipes, large blood vessels, scrap fat, skimmings, settlings, pressings, and the like, and are reasonably free from muscle tissues and blood.

Lard subject to processing may contain refined lard, lard stearin and hydrogenated lard, or be subject to processes of modification provided that it is clearly labelled.

2.2 Rendered pork fat

Rendered pork fat is the fat rendered from the tissues and bones of swine (*Sus scrofa*) in good health, at the time of slaughter, and fit for human consumption. It may contain fat from bones (properly cleaned), from detached skin, from head skin, from ears, from tails and from other issues fit for human consumption.

Rendered pork fat subject to processing may also contain refined lard, refined rendered pork fat, hydrogenated lard, hydrogenated rendered pork fat, lard stearin and rendered pork fat stearin provided that it is clearly labelled.

2.3 Premier jus (oleo stock) is the product obtained by rendering at low heat the fresh fat (killing fat) of heart, caul, kidney and mesentery collected at the time of slaughter of bovine animals in good health at the time of slaughter and fit for human consumption, as well as cutting fats.

2.4 Edible tallow

Edible tallow (dripping) is the product obtained by rendering the clean, sound, fatty tissues (including trimming and cutting fats), attendant muscles and bones of bovine animals and/or sheep (*Ovis aries*) in good health at the time of slaughter and fit for human consumption.

Edible tallow subject to processing may contain refined edible tallow, provided that it is clearly labelled.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

GLC ranges of fatty acid composition (expressed as percentages)

Samples falling within the appropriate ranges specified below are in compliance with this Standard.

| | Lard Rendered pork fat | Premier jus Tallow |
|--------------|---------------------------|-----------------------|
| C6:0 | < 0.5 in total | < 0.5 in total |
| C8:0 | | |
| C10:0 | | |
| C12:0 | | |
| C14:0 | 1.0-2.5 | 2-6 |
| C14:ISO | < 0.1 | < 0.3 |
| C14:1 | < 0.2 | 0.5-1.5 |
| C15:0 | < 0.2 | 0.2-1.0 |
| C15:ISO | < 0.1 | < 1.5 in total |
| C15:ANTI ISO | < 0.1 | |
| C16:0 | 20-30 | 20-30 |
| C16:1 | 2.0-4.0 | 1-5 |
| C16:ISO | < 0.1 | < 0.5 |
| C16:2 | < 0.1 | < 1.0 |
| C17:0 | < 1 | 0.5-2.0 |
| C17:1 | < 1 | < 1.0 |
| C17:ISO | < 0.1 | < 1.5 in total |
| C17:ANTI ISO | < 0.1 | |
| C18:0 | 8-22 | 15-30 |
| C18:1 | 35-55 | 30-45 |
| C18:2 | 4-12 | 1-6 |
| C18:3 | < 1.5 | < 1.5 |
| C20:0 | < 1.0 | < 0.5 |
| C20:1 | < 1.5 | < 0.5 |
| C20:2 | < 1.0 | < 0.1 |
| C20:4 | < 1.0 | < 0.5 |
| C22:0 | < 0.1 | < 0.1 |
| C22:1 | < 0.5 | not detected |

4. FOOD ADDITIVES

4.1 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 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) |

4.2 Antioxidants

| INS No. | Additive | Maximum Use Level |
|--|------------------------------------|---|
| 304 | Ascorbyl palmitate | 500 mg/kg (Singly or in combination) |
| 305 | Ascorbyl stearate | |
| 307a | Tocopherol, d- <i>alpha</i> - | 300 mg/kg (Singly or in combination) |
| 307b | Tocopherol concentrate, mixed | |
| 307c | Tocopherol, dl- <i>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, or TBHQ | | 200 mg/kg but limits above not to be exceeded |

4.3 Antioxidant synergists

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

5. 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* (CODEX STAN 193-1995).

5.1 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.

6. 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* (CAC/RCP 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* (CAC/GL 21-1997).

7. LABELLING

7.1 Name of the food

The product shall be labelled in accordance with the *General Standard for the Labelling of Pre-packaged Foods* (CODEX STAN 1-1985). The name of the fat shall conform to the descriptions given in Section 2 of this Standard.

7.2 Labelling on 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.

8. METHODS OF ANALYSIS AND SAMPLING

8.1 Determination of GLC ranges of fatty acid composition

According to IUPAC 2.301, 2.302 and 2.304 or ISO 5508: 1995/ 5509: 1999.

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:**

| | |
|--------------------|-----------------------------|
| Rendered pork fat: | White when solid |
| Lard: | White to cream |
| Premier jus: | Creamy white to pale yellow |
| Edible tallow: | Off white to pale yellow |

Odour and taste:

Characteristic and free from foreign and rancid odour and taste.

Maximum level

| | |
|----------------------------------|--|
| Matter volatile at 105°C: | 0.3 % |
| Insoluble impurities: | 0.05 % |
| Sodium soap content: | |
| lard | nil |
| premier jus | nil |
| rendered pork fat | 0.005 % |
| edible tallow | 0.005 % |
| Iron (Fe): | 1.5 mg/kg |
| Copper (Cu): | 0.4 mg/kg |
| Acid value: | |
| lard | 1.3 mg KOH/g fat = ffa max 0.65 % |
| premier jus | 2.0 mg KOH/g fat = ffa max 1.00 % |
| rendered pork fat | 2.5 mg KOH/g fat = ffa max 1.25 % |
| edible tallow | 2.5 mg KOH/g fat = ffa max 1.25 % |
| Peroxide value: | up to 10 milliequivalents active oxygen/kg fat |

2. CHEMICAL AND PHYSICAL CHARACTERISTICS

| | Lard | Rendered pork fat | Premier jus | Tallow |
|--|-------------|--------------------------|--------------------|---------------|
| Relative density (40°C/water at 20°C) | 0.896-0.904 | 0.894-0.906 | 0.893-0.904 | 0.894-0.904 |
| Refractive index (N D 40°C) | 1.448-1.460 | 1.448-1.461 | 1.448-1.460 | 1.448-1.460 |
| Titre (°C) | 32-45 | 32-45 | 42.5-47 | 40-49 |
| Saponification value (mg KOH/g fat) | 192-203 | 192-203 | 190-200 | 190-202 |
| Iodine value (Wijs) | 55-65 | 60-72 | 36-47 | 40-53 |
| Unsaponifiable matter (g/kg) | ≤ 10 | ≤ 12 | ≤ 10 | ≤ 12 |

3. METHODS OF ANALYSIS AND SAMPLING

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 copper and iron

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

Determination of relative density

According to IUPAC 2.101, with the appropriate conversion factor.

Determination of refractive index

According to IUPAC 2.102 or ISO 6320: 1995.

Determination of saponification value (SV)

According to IUPAC 2.202 or ISO 3657: 1988.

Determination of iodine value (IV)

Wijs-according to IUPAC 2.205/1, ISO 3961: 1996, AOAC 993.20, or AOCS Cd 1d-1992 (97).

Determination of unsaponifiable matter

According to IUPAC 2.401 (part 1-5) or ISO 3596-1: 1988 and Amendment 1 1997, and ISO 3596-2: 1988 and Amendment 1 1999.

Determination of peroxide value (PV)

According to IUPAC 2.501 (as amended), AOCS Cd 8b-90 (97) or ISO 3960: 1998.

Determination of acidity

According to IUPAC 2.201 or ISO 660: 1996.

Determination of titre

According to ISO 935: 1988, or IUPAC 2.121.