



Government
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Canada

**FOOD QUALITY SPECIFICATIONS -
FOOD PURCHASED BY FEDERAL GOVERNMENT
DEPARTMENTS**

Shortenings, Fats and Oils

April 1, 2018

The following specifications are used by federal government departments purchasing the items listed below for their departmental food requirements

FQS-25 – Shortenings, Fats and Oils

Any items listed in all Food Quality Specification that are **bolded and in brown** are part of the current National Standard Cycle Menu (NSCM) Standing Offer. Other items that are not on the NSCM but are on the Standing Offer may not be listed in **brown**.

FQS-25-01 – Shortenings

FQS-25-02 – Lard

FQS-25-03 – Vegetable Oils

FQS-25-04 – Vegetable Cooking Sprays

Applicable Regulations and Resources for Shortenings, Fats and Oils

FQS-25-01 – Shortenings

Description

1. Shortening is a semisolid fat used in food preparation. Technically, shortening is any fat that has the ability to “shorten” gluten strands in baked goods. Shortening is used to make a short crust or dough because it creates the desirable “flakes”. Shortenings are white or yellow usually tasteless or butter flavoured fats. Often, shortening has a polyunsaturated oil base; soybean, corn, cottonseed or peanut that is refined, deodorized and hydrogenated.
2. Sometimes solid shortening may have some added animal fats or saturated vegetable fats such as palm or coconut oil. There may also be added emulsifiers, yellow colouring and butter flavour.
3. Shortening adds a greater volume to baked goods than other fats like butter and shortening also creates a spongier texture in baked goods. If colour, flavour or other fats have been added to the shortening, the label will list any additions.
4. Vegetable shortening may be stored covered at room temperature or refrigerated.
5. For the purpose of this specification shortening refers to a solid vegetable shortening or a fat that is extracted from a vegetable source.
6. All shortening supplied must be in compliance with:
 - a. the [Food and Drugs Act \(R.S.C., 1985, c. F-27\)](#) and [Food and Drug Regulations \(C.R.C., c. 870\)](#); and
 - b. the [Consumer Packaging and Labelling Act \(R.S.C., 1985, c. C-38\)](#), and [Consumer Packaging and Labelling Regulations \(C.R.C., c. 417\)](#)
7. All shortening supplied must:
 - a. be in full compliance with the requirements of the [Food and Drug Regulations \(C.R.C., c. 870\), Division 9, Fats and Oils](#); and/or
 - b. be in full compliance with the requirements outlined in [Codex Alimentarius – Standard for Edible Fats and Oils not Covered by Individual Standards of Practice](#);
 - c. be edible fat;
 - d. be made solely of fats and oils of vegetable origin;
 - e. limit transfat content to 2% of the total fat content. Refer to [Health Canada – TRANSforming the Food Supply](#),

- f. meet all the requirements as outlined in [Codex Alimentarius - General Principles of Food Hygiene](#);
 - g. come from a facility that meets HACCP criteria as outlined in the Annex to [Codex Alimentarius - General Principles of Food Hygiene](#);
 - h. be free from objectionable flavour or odour of any kind;
 - i. be supplied in the size specified; and
8. Antifoaming agents may be added only to frying shortening. Emulsifying agents shall not be added to frying shortening or puff pastry shortening.
9. All shortenings procured outside of Canada must:
- a. be in full compliance with the requirements of the [Food and Drugs Act \(R.S.C., 1985, c. F-27\)](#) and [Food and Drug Regulations \(C.R.C., c. 870\), Division 9, Fats and Oils](#) or its equivalent in the country of origin;
 - b. have originated in a country that has a system substantially equivalent to those prescribed by the [Food and Drugs Act \(R.S.C., 1985, c. F-27\)](#) and [Food and Drug Regulations \(C.R.C., c. 870\), Division 9, Fats and Oils](#);
 - c. meet all the requirements of applicable local food legislation whenever those requirements are stricter. All shortening shall be obtained by sources approved by the applicable local and international laws, regulations, procedures and requirements;
 - d. be produced, handled and packaged under sanitary conditions in accordance with the [Codex Alimentarius - General Principles of Food Hygiene](#);
 - e. be prepared from fully refined oils or fats, water in combination with dried milk products, and other optional ingredients as set forth in the [Food and Drugs Act \(R.S.C., 1985, c. F-27\)](#) and [Food and Drug Regulations \(C.R.C., c. 870\)](#) or its equivalent in the country of origin;
 - f. the fats and oils must be prepared in an establishment that is registered under the [Meat Inspection Regulations, 1990 \(SOR/90-288\)](#);
 - g. meet all the requirements as outlined in the [Codex Alimentarius - General Principles of Food Hygiene](#);
 - h. come from a facility that meets HACCP criteria as outlined in the Annex to [Codex Alimentarius - General Principles of Food Hygiene](#);
 - i. where vegetable oil is used, be prepared from fully refined oils of vegetable origin;
 - j. shall have a pleasant, delicate flavour and aroma;
 - k. shall be free from objectionable odours or flavours or any kind;
 - l. shall have a uniform colour and a smooth texture and shall possess good melt-in-mouth characteristics; and
 - m. shall be of the size and type specified according to the characteristics as outlined in [Table 1](#).

FQS-25-01-01 - Table 1: Shortenings

Type of Shortening	Characteristics
All Vegetable General Purpose Shortening	Shall be made solely of fats and oils of vegetable origin. Shortening shall be virtually flavourless.
All-Vegetable Frying Shortening	Fry oils are typically categorized into light/medium-duty oils, heavy-duty

Type of Shortening	Characteristics
	<p>oils. Light/medium-duty oils include traditional liquid vegetable oils such as canola, soy, sunflower and olive oil.</p>
<p>General Purpose Frying Shortening</p>	<p>Shall contain medium and high stability vegetable oils. High in oleic canola oil, high in oleic sunflower oil, low linolenic soya and mid oleic sunflower. High in monounsaturated fatty acids (MUFA) with small amount of N-6 and n-3 poly unsaturated fatty acids (PUFA). Low in saturates with better oxidative stability than general vegetable oils.</p> <p>Heavy-duty oils are good for extended deep-frying over longer periods. These highly stable oils are slow to break down through multiple fryings and can withstand deep frying for extended periods. The traditional “heavy-duty” fry products and newer heavy-duty alternatives should function in the fryer the same as partially hydrogenated vegetable oils/shortenings, and some seem to last even longer therefore the fats for general purpose frying shall consist of products that are low in saturated fats. There are several choices for heavy-duty and extended deep frying:</p> <p>Naturally stable plant oils. These include cottonseed, peanut, corn, rice bran and palm. Corn and peanut are traditional favorites for heavy-duty frying. Palm oil, a tropical import, is stable but very high in saturated fat therefore are not recommended.</p> <p>Modified composition oils. “Low-linolenic”, “mid-oleic”, and “high-oleic” are terms used to describe newer oils with a fatty acid composition that’s very stable and good for extended deep frying. These oils come from plant sources (mainly soy, canola and sunflower) that have been bred for this purpose. Under the right conditions these oils can last a week or longer.</p> <p>Light/medium-duty and heavy-duty oil blends. You can increase the stability of low-cost medium-duty oils by blending them with small amounts of naturally stable plant oil or modified composition oil. You can also buy premade blends. A blend made this way can be used for extended deep frying, but it won’t last as long as a 100 percent naturally stable oil or modified composition oil. Typical blends contain 75–90 percent soy or canola oil with TBHQ mixed with 10–25 percent peanut, cottonseed, rice bran or a modified composition oil.</p>
<p>Puff Pastry Shortening</p>	<p>Puff pastry shortening contains about 30 to 45 per cent of oleostearin and from 45 to 60 per cent of cottonseed or other vegetable oil. The product has 7 to 10 per cent of moisture. It is very waxy, and is easily rolled in thin layers for use in puff pastry.</p>

FQS-25-02 – Lard**Description**

10. Lard, the rendered fat of a pig, is softer, sweeter and oilier than butter. Lard can be obtained from any part of the pig as long as there is a high concentration of fatty tissue. Generally lard contains 38-43% saturated fats, 56-62% unsaturated fats, 900kcal/100g and has a smoke point of 121-218⁰C. It is this high smoke point that makes it valued as a cooking oil. Lard sold in bulk or packaged form has been bleached, hydrogenated, refined and/or emulsified.
11. All lard should be stored covered, preferably in the refrigerator.
12. All lard supplied must be in compliance with:
- the [*Food and Drugs Act \(R.S.C., 1985, c. F-27\)*](#) and [*Food and Drug Regulations \(C.R.C., c. 870\), Division 9, Fats and Oils*](#); and
 - the [*Consumer Packaging and Labelling Act \(R.S.C., 1985, c. C-38\)*](#), and the [*Consumer Packaging and Labelling Regulations \(C.R.C., c. 417\)*](#).
13. All lard supplied must:
- be in full compliance with the requirements of the [*Food and Drugs Act \(R.S.C., 1985, c. F-27\)*](#) and [*Food and Drug Regulations \(C.R.C., c. 870\), Division 9, Fats and Oils*](#); and/or
 - be in full compliance with the requirements outlined in [*Codex Alimentarius – Standard for Edible Fats and Oils not Covered by Individual Standards of Practice*](#);
 - be made from fat obtained entirely from animals healthy at the time of slaughter;
 - be prepared in an establishment that is registered under the [*Meat Inspection Regulations, 1990 \(SOR/90-288\)*](#);
 - be edible fat;
 - meet all the requirements as outlined in the [*Codex Alimentarius - General Principles of Food Hygiene*](#) and
 - come from a facility that meets HACCP criteria as outlined in the Annex to the [*Codex Alimentarius - General Principles of Food Hygiene*](#);
 - have a good body, texture and flavour;
 - be free from objectionable flavour or odour of any kind; and
 - be supplied in the size specified.
14. All lard procured outside of Canada must:
- be in full compliance with the requirements of the [*Food and Drugs Act \(R.S.C., 1985, c. F-27\)*](#) and [*Food and Drug Regulations \(C.R.C., c. 870\), Division 9, Fats and Oils*](#); and/or
 - be in full compliance with the requirements outlined in [*Codex Alimentarius – Standard for Edible Fats and Oils not Covered by Individual Standards of Practice*](#) ;
 - meet all the requirements of applicable local food legislation whenever those requirements are stricter. All lard shall be obtained by sources approved by the applicable local and international laws, regulations, procedures and requirements;
 - be made from fat obtained entirely from animals healthy at the time of slaughter;
 - be prepared in an establishment that is registered under the [*Meat Inspection Regulations, 1990 \(SOR/90-288\)*](#);

- f. be edible fat;
- g. meet all the requirements as outlined in the [Codex Alimentarius - General Principles of Food Hygiene](#) and
- h. come from a facility that meets HACCP criteria as outlined in the Annex to the [Codex Alimentarius - General Principles of Food Hygiene](#);
- i. have a good body, texture and flavour;
- j. be free from objectionable flavour or odour of any kind; and
- k. be supplied in the size specified.

Packaging

15. Shall be in compliance with the [Consumer Packaging and Labelling Act \(R.S.C., 1985, c. C-38\)](#), and the [Consumer Packaging and Labelling Regulations \(C.R.C., c. 417\)](#). Unless otherwise specified, normal commercial packaging, labelling, packaging and marking shall be accepted.

Storage and Distribution

16. Lard should be stored at room temperature (28-30⁰C). Usually have a shelf life of 18 months if properly stored and handled.

FQS-25-03 – Vegetable Oils

Description

17. Vegetable oils shall be prepared from fully refined oils of vegetable origin. Vegetable oil is also known as cooking oil. Kinds of edible “vegetable oils” include: olive oil, soybean oil, canola oil, pumpkin seed oil, corn oil, sunflower oil, safflower oil, peanut oil, grape seed oil, sesame oil, etc. or a combination of oils. Oil can be flavoured by immersing aromatic food stuffs such as fresh herbs, peppers, garlic etc. in the oils for a period of time.

18. All oils supplied must be in compliance with:

- a. the [Food and Drugs Act \(R.S.C., 1985, c. F-27\)](#) and [Food and Drug Regulations \(C.R.C., c. 870\)](#); and
- b. the [Consumer Packaging and Labelling Act \(R.S.C., 1985, c. C-38\)](#), and the [Consumer Packaging and Labelling Regulations \(C.R.C., c. 417\)](#).

19. All oils supplied must:

- a. be in full compliance with the requirements of the [Food and Drugs Act \(R.S.C., 1985, c. F-27\)](#) and [Food and Drug Regulations \(C.R.C., c. 870\), Division 9, Fats and Oils](#); and/or
- b. be in full compliance with the requirements outlined [Codex Alimentarius – Standard for Edible Fats and Oils not Covered by Individual Standards of Practice](#) ;and/or
- c. be in full compliance with the requirements outlined in [Codex Alimentarius - General Standard for Named Vegetable Oils](#);
- d. meet all the requirements as outlined in [Codex Alimentarius - General Principles of Food Hygiene](#); and
- e. come from a facility that meets HACCP criteria as outlined in the Annex to the [Codex Alimentarius - General Principles of Food Hygiene](#);
- f. be clear and brilliant in appearance;
- g. be free from objectionable flavour or odour of any kind;

- h. shall be produced and packaged under sanitary conditions in accordance with the [*Canadian Food Inspection Agency - General Principles of Food Hygiene, Composition and Labelling*](#);
 - i. be of the type specified according to the characteristics of the type as indicated in [Table 2](#); and
 - j. be packaged in the size specified.
20. Antioxidants and antifoaming agents may be added to improve the stability and performance of the oil.
21. All oils procured outside of Canada must:
- a. be in full compliance with the requirements of *the Food and Drugs Act (R.S.C., 1985, c. F-27)* and [*Food and Drug Regulations \(C.R.C., c. 870\), Division 9, Fats and Oils*](#); and/or
 - b. be in full compliance with the requirements outlined in [*Codex Alimentarius – Standard for Edible Fats and Oils not Covered by Individual Standards of Practice*](#); and/or
 - c. be in full compliance with the requirements outlined in [*Codex Alimentarius - General Standard for Named Vegetable Oils*](#);
 - d. meet all the requirements of applicable local food legislation whenever those requirements are stricter. All vegetable oils shall be obtained by sources approved by the applicable local and international laws, regulations, procedures and requirements;
 - e. meet all the requirements as outlined in the [*Codex Alimentarius - General Principles of Food Hygiene*](#); and
 - f. come from a facility that meets HACCP criteria as outlined in the Annex to the [*Codex Alimentarius - General Principles of Food Hygiene*](#);
 - g. be clear and brilliant in appearance;
 - h. be free from objectionable flavour or odour of any kind;
 - i. shall be produced and packaged under sanitary conditions in accordance with the [*Canadian Food Inspection Agency - General Principles of Food Hygiene, Composition and Labelling*](#);
 - j. be of the type specified and according to the characteristics of the type as indicated in [Table 2](#); and
 - k. be packaged in the size specified.

FQS-25-03-02 - Table 2: Type of Oil

Type of Oil	Characteristics
Olive oil	<p>Oil obtained from the fruit of the Olive tree. Fat content be according the Food and Drug Regulations (C.R.C., c. 870), Division 9, Fats and Oils B.09.003.and/or Codex Alimentarius - General Standard for Olive Oils and Olive Pomace Oils.</p> <p>Good oil should have a light greenish to yellow colour with a pleasing flavour and odour, and free from other off-flavours and odours. The Olive oil provided shall meet the specifications indicated in the Codex Alimentarius - General Standard for Olive Oils and Olive Pomace Oils for the type of Olive Oil (i.e. virgin olive oil, extra virgin olive oil.)</p> <p>Extra Virgin Olive Oils (EVOO) are the premium type of olive oils. They are the first cold-pressed oil, processed without the addition of heat or solvents. They are lowest in acid of all olive oils, a desirable characteristic. Their colour ranges from gold to deep green but colour is no indication of quality. Cloudy unfiltered EVO oils are prized by some for their fuller flavour. Because of its price, extra virgin olive oil is best used in dishes where it will not be heated such as salad dressings or condiments.</p> <p>Virgin Olive Oil also first pressed and processed without heat or chemicals, but has a higher acid content than extra-virgin oil. Virgin olive oil is an excellent substitute when budget considerations are necessary. It is also more versatile in that it can be used in cooking but still has enough flavour for dressings and condiments.</p> <p>Olive Oil is sometimes labelled “pure” olive oil is a blend of refined olive oil (extracted with pressure, heat, solvents and/or chemicals) and virgin olive oil from which it gets its colour and flavour. It has a higher smoke point than extra virgin or virgin olive oil making it an excellent choice for cooking.</p> <p>“Light” Olive Oil is a marketing title describing refined olive oils that are mild or light in taste or colour. The calorie content is the same as all other olive oils – 120 kcal per 15 ml/1 tablespoon.</p>
Coconut oil	<p>Dried coconut meat, called copra, is pressed and used to make coconut oil. Coconut oil is one of the few non-animal saturated fats and is widely used in the manufacture of commercial baked goods. Coconut oil provided shall meet the requirements as indicated in the Food and Drug Regulations (C.R.C., c. 870), Division 9, Fats and Oils B.09.004. and/or Codex Alimentarius - General Standard for Named Vegetable Oils. The two categories for coconut oil are refined and unrefined. Refined coconut oil is usually tasteless and odourless. Because it has been refined, it can withstand slightly higher cooking temperatures before reaching its smoke point. Refined coconut oils are excellent for cooking foods where a clean pure malleable fat is required without a dominant coconut flavour. Unrefined coconut oil is typically labeled “virgin” or “extra-virgin” and has a very mild coconut flavour and scent. Good oil is clear at room temperature but can sometimes be a white solid and has a fresh coconut odour. The smoke point of coconut oil is 177°C</p>

Type of Oil	Characteristics
	(351°F).
Cottonseed oil	Cooking oil extracted from the seeds of cotton plant. Cotton seed oil provided shall meet the requirements as indicated in the Food and Drug Regulations (C.R.C., c. 870), Division 9, Fats and Oils B.09.004. and/or Codex Alimentarius - General Standard for Named Vegetable Oils. Good oil is slightly amber in colour, clear, and has a fresh, sweet odour. Dark colour indicates low quality and poor refining methods. High fatty acid content indicates low quality.
Corn oil	Oil extracted from the germ of corn (maize). Corn seed oil provided shall meet the requirements as indicated in the Food and Drug Regulations (C.R.C., c. 870), Division 9, Fats and Oils B.09.006 and/or Codex Alimentarius - General Standard for Named Vegetable Oils. Corn oil provided shall be clear and brilliant in appearance, be light amber in colour, and be free from objectionable flavour or odour.
Soybean oil	Oil that is extracted from soybeans. Soya bean oil provided shall meet the requirements as indicated in the Food and Drug Regulations (C.R.C., c. 870), Division 9, Fats and Oils B.09.008 and/or Codex Alimentarius - General Standard for Named Vegetable Oils. Soybean oil provided shall be clear and brilliant in appearance and free from objectionable flavour or odour. Soybean oil that has a characteristic fishy or bean flavour indicates that the oil has not been carefully refined and deodorized. Such a product is unacceptable.
Peanut oil	Oil made from peanuts. Peanut oil provided shall meet the requirements as indicated in the Food and Drug Regulations (C.R.C., c. 870), Division 9, Fats and Oils B.09.004. and/or Codex Alimentarius - General Standard for Named Vegetable Oils. Peanut oil shall have the aroma and taste of peanuts and be amber in colour. Some, a bit darker, can still be of good quality. In the UK, it is marketed as <i>groundnut oil</i> .
Canola oil	Oil made from pressed canola seed. Canola was developed from rapeseed using traditional plant breeding techniques. This new oilseed was named “Canola” and there is a strict internationally regulated definition of canola that differentiates it from rapeseed, based upon it having less than two percent erucic acid and less than 30 umoles glucosinolates. Therefore, oilseed products that do not meet this standard cannot use the trademarked term, Canola. Canola oil provided shall meet the requirements as indicated in the Food and Drug Regulations (C.R.C., c. 870), Division 9, Fats and Oils B.09.004. and/or Codex Alimentarius - General Standard for Named Vegetable Oils. Canola oil is yellowish in colour.
Sunflower oil	Oil derived from oil type sunflower seeds. Sunflower oil provided shall meet the requirements as indicated in the Food and Drug Regulations (C.R.C., c. 870), Division 9, Fats and Oils B.09.004. and/or Codex Alimentarius - General Standard for Named Vegetable Oils. Sunflower oil provided shall be food grade sunflower oil, and shall be clear and pale yellow in colour with a mild-flavour.

Type of Oil	Characteristics
Sesame oil	Oil derived from sesame seeds. There are many varieties of sesame oils. Sesame oil provided shall be of the variety specified. Cold pressed sesame oil, produced from raw seeds, is pale yellow; gingelly (Indian sesame oil) or til oil is golden; and Chinese and Korean sesame oils, derived from roasted sesame seeds, are a dark brown colour. The light form shall have a light flavour with a hint of nuttiness. The dark form is much stronger.

Packaging

22. Shall be in compliance with the [Consumer Packaging and Labelling Act \(R.S.C., 1985, c. C-38\)](#), and the [Consumer Packaging and Labelling Regulations \(C.R.C., c. 417\)](#). Unless otherwise specified, normal commercial packaging, labeling, packing and marketing shall be acceptable. Vegetable oil shall be supplied in the specified package sizes.

Storage and Distribution

23. Whether refined or not, all oils are sensitive to heat, light and exposure to oxygen. It is recommended to store and transport all oils in a refrigerator or a cool, dry place. Oils may thicken, but when left standing out at room temperature, they will return to liquid.

FQS-25-04 – Vegetable Cooking Sprays

Description

24. Vegetable Cooking Spray or non-stick spray is a spray form of a vegetable oil as a lubricant, lecithin as an emulsifier, and a propellant such as food-grade alcohol, nitrous oxide, carbon dioxide or propane. Cooking spray is applied to frying pans and other cookware to prevent food from sticking, as a replacement for butter, shortening, or oils. Cooking sprays can also have flour added to them for use as a replacement for the greasing and flouring of pans often required for baked goods.

25. Most cooking sprays have less food energy per serving than an application of vegetable oil, because they are applied in a much thinner layer.

26. Sprays are available with plain vegetable oil, butter and olive oil flavour.

27. Some brands can have off-flavours which are transferred to the food. Vegetable cooking sprays shall not leave a residue

Applicable Regulations and Resources for Shortenings, Fats and Oils

[Food and Drug Regulations \(C.R.C., c. 870\)](#)

[Food and Drug Regulations \(C.R.C., c. 870\), Division 9, Fats and Oils](#)

[Food and Drugs Act \(R.S.C., 1985, c. F-27\)](#)

[Consumer Packaging and Labelling Act \(R.S.C., 1985, c. C-38\)](#)

[Consumer Packaging and Labelling Regulations \(C.R.C., c. 417\)](#)

[Codex Alimentarius - General Principles of Food Hygiene](#)

[Codex Alimentarius - General Standard for Olive Oils and Olive Pomace Oils](#)

[Codex Alimentarius - General Standard for Named Vegetable Oils](#)

[Codex Alimentarius – Standard for Edible Fats and Oils not Covered by Individual Standards of Practice](#)

[Meat Inspection Regulations, 1990 \(SOR/90-288\)](#)

[Health Canada – TRANSforming the Food Supply](#)

[Canadian Food Inspection Agency - General Principles of Food Hygiene, Composition and Labelling](#)