

NATURAL HEALTH PRODUCT

FIXED OIL PRODUCTS - ORAL

This monograph is intended to serve as a guide to industry for the preparation of Product Licence Applications (PLAs) for natural health product market authorization. It is not intended to be a comprehensive review of the medicinal ingredients.

Notes

- This monograph only covers naturally-occurring fatty acids in each fixed oil, including concentrated oils, but excludes fixed oils spiked with additional fatty acids.
- Essential/volatile oil preparations (e.g., those prepared by distillation) are not within the scope of this monograph.
- Hydrogenated oils and partially hydrogenated oils are not within the scope of this monograph.
- This monograph may be used to support single ingredient or multi-ingredient products containing any medicinal ingredient from Table 1.
- Text in parentheses is additional optional information which can be included on the PLA and product label at the applicant's discretion.
- The solidus (/) indicates that the terms or statements are synonymous. Either term or statement may be selected by the applicant.

Date

March 28, 2024

Proper name(s), Common name(s), and Source information

Table 1. Proper name(s), Common name(s) and Source information

Proper name(s)	Common name(s)	Source information		
Troper name(s)	Common name(s)	Source material(s)	Part(s)	
Borago officinalis	Borage oil	Borago officinalis	Seed	
Camelina sativa	False flax oil	Camelina sativa	Seed	
Cannabis sativa	Hemp seed oil	Cannabis sativa	Seed	
Canola Oil	Canola oilColza oilRapeseed oil	 Brassica napus Brassica juncea Brassica rapa	Seed	
Carthamus tinctorius	Safflower oil	Carthamus tinctorius	Seed	
Cocos nucifera	Coconut oil	Cocos nucifera	Seed endosperm	
Cod liver oil	Cod liver oil	Gadidae ¹	Liver	
Cucurbita pepo	Pumpkin seed oil	Cucurbita pepo	Seed	



Proper name(s)	Common name(s)	Source inform	nation
Proper name(s)	Common name(s)	Source material(s)	Part(s)
Fish oil ²	Fish oil	 Ammodytidae Carangidae Clupeidae Engraulidae Gadidae³ Osmeridae Salmonidae Scombridae 	Whole
Helianthus annuus	Sunflower oil	Helianthus annuus	Seed
Hippophae rhamnoides	Sea buckthorn fruit oil	Hippophae rhamnoides	Fruit
** '41 '4	Sea buckthorn seed oil	Hippophae rhamnoides	Seed
Krill oil	Krill oil	 Euphasia pacifica Euphausia superba	Whole
Linum usitatissimum	Flax oilFlaxseed oilLinseed oil	Linum usitatissimum	Seed
Oenothera biennis	 Evening primrose oil Primrose oil	Oenothera biennis	Seed
Olea europaea	Olive oil	Olea europaea	Fruit
Prunus dulcis	 Almond oil Sweet almond oil	Prunus dulcis	Seed
Ribes nigrum	Blackcurrant seed oil	Ribes nigrum	Seed
Salvia hispanica	Chia seed oil	Salvia hispanica	Seed
Schizochytrium spp.	Schizochytrium oil	Schizochytrium spp.	Whole
Seal oil	Seal oil	 Cystophora cristata Erignathus barbatus Halichoerus grypus Pagophilus groenlandicus Phoca vitulina Pusa hispida 	Blubber
Squid oil	Squid oil	 Todarodes pacificus Docidicus gigas Illex argentinus Illex illecebrosus	Whole
Triticum aestivum	Wheat germ oil	Triticum aestivum	Seed germ
Vitis vinifera	Grape seed oil	Vitis vinifera	Seed

References: Proper names: NHPID 2023; Common names: NHPID 2023; Source information: FCC 2023, ITIS 2023, USP-NF 2023, Ph.Eur 2023, Linnamaa et al. 2010, Yurko-Mauro et al. 2010, Dubois et al. 2007, Callaway et al. 2005, Hoffmann 2003, Yang et al. 1999.



¹ Cod liver oil: The species common names and not the family could be listed on the label.

Route of administration

Oral

Dosage form(s)

This monograph excludes foods or food-like dosage forms as indicated in the Compendium of Monographs Guidance Document.

Acceptable dosage forms for oral use are indicated in the dosage form drop-down list of the webbased Product Licence Application form for Compendial applications.

Use(s) or Purpose(s) and Dose(s)

Subpopulation

Adults 18 years and older

Quantity(ies)

Refer to Table 2 and 3.



² **Fish oil**: Corresponds to oil from the whole body of one or more of species of the families listed in Table 1 in its natural and/or concentrated triglyceride/triacylglycerol form and/or its concentrated esterified form (BP 2023; Ph.Eur. 2023; Froese and Pauly 2022). The species common names and not the family could be listed on the label.

³ **Fish oil**: For fish oils including species of Gadidae as a source material, the vitamin A and D content should be tested to ensure that the daily maximum amounts meet the Multi-Vitamin/Mineral Supplements monograph for each age group.



Table 2. Uses or purposes, associated daily dose and potency constituents (LA – Linoleic acid; ALA – Alpha-linolenic acid; EPA - Eicosapentaenoic acid; DHA - Docosahexaenoic acid; DPA - Docosapentaenoic acid; GLA-Gamma-linolenic acid; OA – Oleic acid)

Medicinal	Methods of	Uses or Purposes	Daily Dose ¹	Potency
ingredients	preparation	-		constituents
Borage oil	Non- standardized fixed oil	 Source of essential fatty acids for the maintenance of good health Source of omega-6 fatty acids for the maintenance of good health Source of linoleic acid (LA) for the maintenance of good health 	Oil: 3.7-5 g	N/A
	Standardized fixed oil	As per Table 3	Oil: up to 5 g and LA, ALA, GLA and/or OA as per Table 3*	LA, ALA, GLA, OA
Hemp seed oil	Non- standardized fixed oil	N/A	Oil: up to 15 g	N/A
	Standardized fixed oil	As per Table 3	Oil: up to 15 g and LA, ALA, GLA and/or OA as per Table 3*	LA, ALA, GLA, OA
Canola oil	Non- standardized fixed oil	N/A	Oil: up to 15 g	N/A
	Standardized fixed oil	As per Table 3	Oil: up to 15 g and LA, ALA and/or OA as per Table 3*	LA, ALA, OA
False flax oil	Non- standardized fixed oil	N/A	Oil: up to 15 g	N/A
	Standardized fixed oil	As per Table 3	Oil: up to 15 g and LA, ALA and/or OA as per Table 3*	LA, ALA, OA
Safflower oil	Non- standardized fixed oil	N/A	Oil: up to 15 g	N/A



Medicinal ingredients	Methods of preparation	Uses or Purposes	Daily Dose ¹	Potency constituents
	Standardized fixed oil	As per Table 3	Oil: up to 15 g and LA, ALA and/or OA as per Table 3*	LA, ALA, OA
Coconut oil	Non-standardized fixed oil Standardized fixed oil	 Source of antioxidant(s)/Provides antioxidant(s) Source of antioxidant(s)/Provides antioxidant(s) that help(s) fight/protect (cell) against/reduce (the oxidative effect of/the oxidative damage caused by/cell damage caused by) free radicals Source of antioxidant(s)/Provides antioxidant(s) Source of antioxidant(s)/Provides antioxidant(s)/Provides antioxidant(s) that help(s) fight/protect (cell) against/reduce (the oxidative effect of/the 	Oil: up to 15 g and LA, ALA and/or OA as per Table 3*	N/A LA, ALA, OA
		oxidative damage caused by/cell damage caused by) free radicals and/or • As per Table 3		
Cod liver oil	Standardized fixed oil	As per Cod liver oil monograph	Oil: up to 4 g and Amounts of EPA, DHA, Vitamin A and Vitamin D as per the Cod liver oil	EPA, DHA, Vitamin A, Vitamin D

Medicinal ingredients	Methods of preparation	Uses or Purposes	Daily Dose ¹	Potency constituents
			monograph	
		As per Table 3	Oil: up to 4 g and Minimum amounts of EPA and/or DHA as per Table 3* and Maximum amounts of EPA, DHA, Vitamin A and Vitamin D as per the Cod liver oil monograph	EPA, DHA, Vitamin A, Vitamin D
Pumpkin seed oil	Non- standardized fixed oil	N/A	Oil: up to 15 g	N/A
	Standardized fixed oil	As per Table 3	Oil: up to 15 g and LA and/or OA as per Table 3*	LA, OA
Fish oil	Standardized fixed oil	As per Fish oil monograph	As per the fish oil monograph	EPA, DHA
		As per Table 3	Oil: up to 10 g and EPA and/or DHA as per Table 3*	EPA, DHA
Sunflower oil	Non- standardized fixed oil	Source of antioxidant(s)/Pro vides antioxidant(s) Source of antioxidant(s)/Pro vides antioxidant(s) that help(s) fight/protect (cell) against/reduce (the oxidative effect of/the oxidative damage caused by/cell damage caused by) free radicals	Oil: up to 15 g	N/A
	Standardized	• Source of	Oil: up to 15 g	LA, OA

Medicinal	Methods of	Uses or Purposes	Daily Dose ¹	Potency
ingredients	preparation	-		constituents
	fixed oil	antioxidant(s)/Pro vides antioxidant(s) • Source of antioxidant(s)/Pro vides antioxidant(s) that help(s) fight/protect (cell) against/reduce (the oxidative effect of/the oxidative damage caused by/cell damage caused by) free radicals and/or • As per Table 3	and LA and/or OA as per Table 3*	
Sea buckthorn	Non-	N/A	Oil: up to 5 g	N/A
seed oil	standardized fixed oil		1 5	
	Standardized fixed oil	As per Table 3	Oil: up to 5 g and LA, ALA and/or OA as per Table 3*	LA, ALA, OA
Sea buckthorn fruit oil	Non- standardized fixed oil	N/A	Oil: up to 5 g	N/A
	Standardized fixed oil	As per Table 3	Oil: up to 5 g and LA, ALA and/or OA as per Table 3*	LA, ALA, OA
Krill oil	Standardized fixed oil	 Source of EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid) for the maintenance of good health Source of omega-3 fatty acids for the maintenance of good health Source of the omega-3 fatty acids such as EPA 	Oil: up to 4.1 g and EPA+DHA: 100 mg or more	EPA, DHA

Medicinal ingredients	Methods of preparation	Uses or Purposes	Daily Dose ¹	Potency constituents
	Park	and DHA		
		As per Table 3	Oil: up to 4.1 g and EPA and/or DHA as per Table 3*	EPA, DHA
Flaxseed oil	Non- Standardized fixed oil	 Source of essential fatty acid (alphalinolenic acid (ALA)) for the maintenance of good health Source of omega-3 fatty acids for the maintenance of good health Source of alphalinolenic acid (ALA) for the maintenance of good health Source of essential fatty acid (linoleic acid (LA)) for the maintenance of good health Source of essential fatty acids (alphalinolenic acid (ALA) and linoleic acid (ALA) and linoleic acid (LA)) for the maintenance of good health Source of omegafatty acids for the maintenance of good health Source of linoleic acid (LA) for the maintenance of good health Source of linoleic acid (LA) for the maintenance of 	Oil: 0.23-32 g	N/A
	Standardized fixed oil	good health As per Table 3	Oil: up to 32 g and LA, ALA and/or OA as per Table 3*	LA, ALA, OA

Medicinal ingredients	Methods of preparation	Uses or Purposes	Daily Dose ¹	Potency constituents
Evening primrose oil	Non- standardized fixed oil	 Source of essential fatty acids for the maintenance of good health Source of omega-6 fatty acids for the maintenance of good health Source of linoleic acid (LA) for the maintenance of good health 	Oil: 1.3-6 g	N/A
	Standardized fixed oil	As per Table 3	Oil: up to 6 g and LA, ALA, GLA and/or OA as per Table 3*	LA, ALA, GLA, OA
Olive oil	Non- standardized fixed oil	 Source of antioxidant(s)/Pro vides antioxidant(s) Source of antioxidant(s)/Pro vides antioxidant(s) that help(s) fight/protect (cell) against/reduce (the oxidative effect of/the oxidative damage caused by/cell damage caused by) free radicals 	Oil: up to 15 g	N/A
	Standardized fixed oil	 Source of antioxidant(s)/Pro vides antioxidant(s) Source of antioxidant(s)/Pro vides antioxidant(s) that help(s) fight/protect (cell) against/reduce (the oxidative 	Oil: up to 15 g and LA and/or OA as per Table 3*	LA, OA

Medicinal ingredients	Methods of preparation	Uses or Purposes	Daily Dose ¹	Potency constituents
		effect of/the oxidative damage caused by/cell damage caused by) free radicals and/or • As per Table 3		
Almond oil	Non- standardized fixed oil	N/A	Oil: up to 15 g	N/A
	Standardized fixed oil	As per Table 3	Oil: up to 15 g and LA, ALA and/or OA as per Table 3*	LA, ALA, OA
Blackcurrant seed oil	Non- standardized fixed oil	N/A	Oil: up to 10.5 g	N/A
	Standardized fixed oil	As per Table 3	Oil: up to 10.5 g and LA, ALA, GLA and/or OA as per Table 3*	LA, ALA, GLA, OA
Chia seed oil	Non- standardized fixed oil	N/A	Oil: up to 4.5 g	N/A
	Standardized fixed oil	As per Table 3	Oil: up to 4.5 g and LA, ALA and/or OA as per Table 3*	LA, ALA, OA
Schizochytrium oil	Standardized fixed oil	Helps support cognitive health and/or brain function	DHA: 200-2,000 mg	EPA, DHA
		As per Table 3	Oil: up to 5 g and EPA and/or DHA as per Table 3*	
Seal oil	Standardized fixed oil	As per Seal oil monograph	As per Seal oil monograph	EPA, DHA, DPA
		As per Table 3	Oil: up to 10 g and EPA, DHA and/or DPA as per Table 3*	
Squid oil	Non- standardized	N/A	Oil: up to 5 g	N/A

Medicinal ingredients	Methods of preparation	Uses or Purposes	Daily Dose ¹	Potency constituents
ingredients	fixed oil			constituents
	Standardized fixed oil	As per Table 3	Oil: up to 5 g and EPA and/or DHA as per Table 3*	EPA, DHA
Wheat germ oil	Non- standardized fixed oil	 Source of antioxidant(s)/Pro vides antioxidant(s) Source of antioxidant(s)/Pro vides antioxidant(s) that help(s) fight/protect (cell) against/reduce (the oxidative effect of/the oxidative damage caused by/cell damage caused by) free radicals 	Oil: up to 15 g	N/A
	Standardized fixed oil	 Source of antioxidant(s)/Pro vides antioxidant(s) Source of antioxidant(s)/Pro vides antioxidant(s) that help(s) fight/protect (cell) against/reduce (the oxidative effect of/the oxidative damage caused by/cell damage caused by/cell damage caused by) free radicals and/or As per Table 3 	Oil: up to 15 g and LA, ALA and/or OA as per Table 3*	LA, ALA, OA
Grape seed oil	Non- standardized fixed oil	N/A	Oil: up to 15 g	N/A

Medicinal ingredients	Methods of preparation	Uses or Purposes	LL Jaily Llose ¹	Potency constituents
	Standardized fixed oil	As per Table 3	Oil: up to 15 g and LA, ALA and/or OA as per Table 3*	LA, ALA, OA

References: NNHPD 2023; Zielinska et al. 2017; Quinn et al. 2010; Yang et al. 1999; Leventhal et al. 1994.

Table 3. Uses or Purposes based on potency constituents - fatty acids

Potency constituents: Fatty acids ¹	Uses or Purposes	Minimum Daily Doses ²
LA	 Source of linoleic acid (LA) for the maintenance of good health Source of omega-6 fatty acid for the maintenance of good health Source of an essential fatty acid for the maintenance of good health 	850 mg
ALA	 Source of alpha-linolenic acid (ALA) for the maintenance of good health Source of omega-3 fatty acid for the maintenance of good health Source of an essential fatty acid for the maintenance of good health 	80 mg
LA + ALA	Source of essential fatty acids for the maintenance of good health	850 mg LA and 80 mg ALA
EPA + DHA or EPA + DPA or DHA + DPA or EPA + DHA + DPA	Source of omega-3 fatty acids for the maintenance of good health	100 mg
EPA	Source of eicosapentaenoic acid (EPA) for the maintenance of good health	100 mg
DHA	Source of docosahexaenoic acid (DHA) for the maintenance of good health	100 mg

¹The amount of fixed oils can also be represented in volumetric amount (i.e. ml) based on the density information listed in Appendix 1.

^{*}The total amount of a specific fatty acid (e.g. LA) in the product should meet the minimum dose as per Table 3 to support a claim from this table. It is not required that each oil meets the minimum amount of specific fatty acids if the total amount of a fatty acid in the finished product meets it.

Potency constituents: Fatty acids ¹	Uses or Purposes	Minimum Daily Doses ²
	Helps support/maintain cognitive healthHelps support/maintain brain function	150 mg
	 Helps support/maintain eye health/function Helps support/maintain visual health/function 	200 mg
DPA	Source of docosapentaenoic acid (DPA) for the maintenance of good health	100 mg
EPA + DHA	 Helps support/maintain (normal) heart/ cardiovascular health Helps support/maintain (normal) heart/ cardiovascular function 	200 mg
	 Helps support/maintain normal (blood) triglyceride/triacylglycerol levels Helps reduce (blood) triglyceride(s)/ triacylglycerol(s) (levels) 	1000 mg
GLA	 Source of gamma-linoleic acid (GLA) for the maintenance of good health Source of omega-6 fatty acid for the maintenance of good health 	100 mg
OA	Source of oleic acid (OA)	100 mg

¹For products making claims from this table, the potencies must be indicated for the relevant fatty acid constituents.

Notes:

- The above uses can be combined on the product label (e.g. Helps reduce triglycerides and maintain cardiovascular health).
- The terms 'Helps' or 'Helps to' can be used interchangeably on the label.

Direction(s) for use

No statement required.

Combination rules and restrictions

- A use or purpose statement is only acceptable if at least one medicinal ingredient/potency constituent associated with that statement is present at a dose at or above the minimum daily dose listed in Tables 2 and 3.
- Medicinal ingredients which do not meet the minimum daily dose for a use or purpose statement will be considered as acceptable complementary medicinal ingredients in product formulations.



²References: NNHPD 2023, EFSA 2010a, EFSA 2010b, EFSA 2009, Simopolous 2007, IOM 2006, IOM 2002, Simopolous 1999.



- All medicinal ingredients included in this monograph may be combined with the following restrictions:
 - The combined maximum daily dose of oils in a product must not exceed 15.0 g per day (NNHPD 2023). Maximum daily doses for individual medicinal ingredient as per Table 2 apply.
 - The combined maximum daily dose of EPA+DHA or EPA+DHA+DPA in a single product must not exceed 5,000 mg for 18 years and older per day (US FDA 2019; EFSA 2012).

Duration(s) of Use

No statement required.

Risk Information

Caution(s) and warnings(s)

Products containing Hemp seed oil, Sea buckthorn seed oil, Krill oil, Blackcurrant seed oil and/or Squid oil

Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you are pregnant or breastfeeding.

Products containing fish oil

Pain of rheumatoid arthritis

Ask a health care practitioner/health care provider/health care professional/doctor/physician if symptoms worsen.

Healthy mood balance

Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have psychological disorders such as anxiety or depression.

Contraindication(s)

No statements required.

Known adverse reaction(s)

Products containing Krill oil and/or Squid oil

Stop use if hypersensitivity/allergy occurs (HC 2017).





Non-medicinal ingredients

Must be chosen from the current Natural Health Products Ingredient Database (NHPID) and must meet the limitations outlined in that database.

Storage conditions

Must be established in accordance with the requirements described in the *Natural Health Products Regulations*.

Products containing Schizochytrium oil, False flax oil, Hemp seed oil, Cod liver oil, Fish oil, Sea buckthorn seed oil, Krill oil, Flaxseed oil, Black current seed oil, Chia seed oil, Seal oil and Squid Oil except those encapsulated

Refrigerate after opening (Wille and Gonus 1989).

All products (information for industry; not for labelling)

To be packaged in airtight container, protected from light (Ph.Eur. 2023; USP-NF 2023).

Specifications

- The finished product specifications must be established in accordance with the requirements described in the Natural and Non-prescription Health Products Directorate (NNHPD) Quality of Natural Health Products Guide.
- The medicinal ingredients must comply with the requirements outlined in the NHPID.
- Cod liver oil, Fish oil, Krill oil, Seal oil and Squid oil are considered marine oils and therefore the requirements for the contaminants in marine oils of the NNHPD Quality of Natural Health Products Guide applies to products containing these ingredients apply.
- The requirements for the oxidative stability in oils of the NNHPD Quality of Natural Health Products Guide applies to all products containing any medicinal ingredient on this monograph.
- For all products indicating one or more of the potencies listed in the dose section, an assay must be performed in order to confirm the potency(ies).

Fish oil from Gadidae species

For fish oils including Gadidae as a source material, the vitamin A and D content should be tested to ensure that their respective daily maximum amounts meet the Multi-Vitamin/Mineral Supplements monograph for each age group.

Hemp seed oil

Products containing Hemp seed oil must not contain more than 10 parts per million delta-9-



Tetrahydrocannabinol (THC), or phytocannabinoids that have been isolated or concentrated. The determination of the THC concentration must take into account the potential to convert delta-9-tetrahydrocannabinolic acid (THCA) to THC. Hemp derivatives (e.g. hemp seed oil) must also be compliant with the Industrial Hemp Regulations (IHR). All sources of hemp falling under the IHR are expected to be of an approved cultivar, defined in the IHR as any variety of industrial hemp set out in the List of Approved Cultivars, published by the Government of Canada on its website, as amended from time to time.

EXAMPLE OF PRODUCT FACTS:

Consult the Guidance Document, Labelling of Natural Health Products for more details.

Product Facts		
Medicinal ingredients in each capsule		
Fish oil (Atlantic salmon, sardine, tuna – whole)	XX mg	
Providing YY mg of Eicosapentaenoic acid (EPA); ZZ mg of Docosahexaenoic acid (DHA)		
Evening primrose oil (<i>Oenothera biennis</i> – seed)	XX mg	
Olive oil (<i>Olea europaea</i> – fruit)	XX mg	
Wheat germ oil (<i>Triticum aestivum</i> – seed germ)	XX mg	
Providing: Linoleic acid YY mg		

Uses

- In conjunction with conventional therapy, helps to reduce the pain of rheumatoid arthritis in adults.
- Helps to promote healthy mood balance.
- Source of essential fatty acids for the maintenance of good health.
- Source of omega-6 fatty acids for the maintenance of good health.
- Source of linoleic acid (LA) for the maintenance of good health.
- Source of antioxidants
- Source of antioxidants that help protect cell against free radicals.

Warnings

If applicable¹:

Allergens: food allergen, gluten (gluten source), sulphites

Contains aspartame

Ask a health care practitioner before use if you have psychological disorders such as anxiety or depression².

Ask a health care practitioner if symptoms worsen³.

Directions

Adults 18 years and older: Take X capsule(s), X time(s) a day.

Other information

(Add storage information)

Non-medicinal ingredients

List all NMIs

Questions? (Call) 1-XXX-XXX-XXXX



¹ This section can be removed from the table if the product contains no allergen or aspartame.

² The qualifier 'If used for healthy mood balance:' may be added to the label to inform consumers.

³ The qualifier 'For pain of rheumatoid arthritis:' may be added to the label to inform consumers.



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EFSA 2010a. Scientific Opinion on the substantiation of health claims related to docosahexaenoic acid (DHA) and maintenance of normal (fasting) blood concentrations of triglycerides (ID 533, 691, 3150), protection of blood lipids from oxidative damage (ID 630), contribution to the maintenance or achievement of a normal body weight (ID 629), brain, eye and nerve development (ID 627, 689, 704, 742, 3148, 3151), maintenance of normal brain function (ID 565, 626, 631, 689, 690, 704, 742, 3148, 3151), maintenance of normal vision (ID 627, 632, 743, 3149) and maintenance of normal spermatozoa motility (ID 628) pursuant to Article 13(1) of Regulation (EC) No 1924/20061. EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA). EFSA Journal 2010; 8(10):1734. [Accessed 2023 March 07]. Available





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EFSA 2010b. Scientific Opinion on the substantiation of health claims related to eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), docosapentaenoic acid (DPA) and maintenance of normal cardiac function (ID 504, 506, 516, 527, 538, 703, 1128, 1317, 1324, 1325), maintenance of normal blood glucose concentrations (ID 566), maintenance of normal blood pressure (ID 506, 516, 703, 1317, 1324), maintenance of normal blood HDL-cholesterol concentrations (ID 506), maintenance of normal (fasting) blood concentrations of triglycerides (ID 506, 527, 538, 1317, 1324, 1325), maintenance of normal blood LDL-cholesterol concentrations (ID 527, 538, 1317, 1325, 4689), protection of the skin from photo-oxidative (UV-induced) damage (ID 530), improved absorption of EPA and DHA (ID 522, 523), contribution to the normal function of the immune system by decreasing the levels of eicosanoids, arachidonic acid-derived mediators and pro-inflammatory cytokines (ID 520, 2914), and "immunomodulating agent" (4690) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA). EFSA Journal 2010; 8(10):1796. [Accessed 2023 March 07]. Available from: http://www.efsa.europa.eu/en/efsajournal/doc/1796.pdf.

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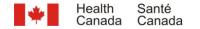
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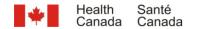
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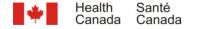
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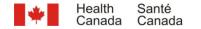
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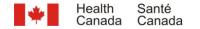
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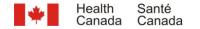
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Appendix 1.

Density of the fixed oils

Fixed oils	Parts	Density
Borage oil	Seed	0.908 - 0.925 g/mL
False flax oil	Seed	0.918 – 0.927 g/mL
Hemp seed oil	Seed	0.920 – 0.930 g/mL
Canola oil	Seed	0.917 – 0.923 g/mL*
Safflower oil	Seed	0.918 – 0.937 g/mL
Coconut oil	Seed endosperm	0.913 – 0.919 g/mL
Cod liver oil	Liver	0.921 – 0.927 g/mL
Pumpkin seed oil	Seed	0.901 – 0.924 g/mL
Fish oil	Whole	0.929 – 0.931 g/mL
Sunflower oil	Seed	0.919 – 0.920 g/mL
Sea buckthorn fruit oil	Fruit	0.913 – 0.919 g/mL
Sea buckthorn seed oil	Seed	0.913 – 0.919 g/mL
Krill oil	Whole	0.919 – 0.925 g/mL*
Flaxseed oil	Seed	0.928 – 0.935 g/mL
Evening Primrose oil	Seed	0.918 – 0.930 g/mL
Olive oil	Fruit	0.908 – 0.914 g/mL
Sweet Almond oil	Seed	0.913 – 0.919 g/mL*
Blackcurrant seed oil	Seed	0.919 – 0.926 g/mL
Chia seed oil	Seed	0.922 – 0.927 g/mL
Schizochytrium oil (algal oil)	Whole	0.944 – 0.950 g/mL
Seal oil	Blubber	0.921 – 0.927 g/mL*
Squid oil	Whole	0.953 - 0.959 g/mL*
Wheat germ oil	Seed germ	0.922 – 0.937 g/mL
Grape Seed oil	Seed	0.921 – 0.924 g/mL

^{*}When only a single value was found in the evidence, a variation of ± 0.003 g/mL was applied to allow for potential variability.



At least one of the following references was used to support density ranges: Moovendhan 2021; Turck et al. 2021; Purnamayati et al. 2019; Uzunova et al. 2019; Delgado-et al. 2018; Petcu et al. 2016; Lee et al. 2014; Edwin et al. 2013; Firestone 2013; Manisha and Sharma 2011; Zhang et al. 2011; Alamu et al. 2010; Budavari 1996; Subrahmanyam et al. 1994; Kyte R.M. 1956.