Fixed/Carrier Oils
22 Oil Profiles w/ Fatty Acid Charts

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22 fixed carrier oils

A quick guide to 22 fixed/carrier oils for essential oils, making salves and balms and use in skincare. This e-book gives you the properties, fatty acid profiles, use and substitutions for 22 carrier oils. Each oil has its own pie chart of the fatty acid make up in pictorial form and a traditional chart by percentages plus a photograph of the oil. Oils perform on the skin differently depending on their fatty acid make up whether it be a highly saturated butter, monounsaturated almond oil or highly unsaturated chia seed oil. Having a glancing familiarity with these properties will help you choose the best fixed carrier for your blended products.

All fixed oils have color, aroma and nourishing properties that can improve your blend.

A tip when purchasing fixed oils is to sample a small amount before stocking up. Sometimes scent or color or texture may not work for you. Oils vary by source, supplier and level of refinement. Some fixed oil scents can be over come by creative blending with the essential oils while others pose more of a challenge.

These are just a few of the many fixed oils used as carriers and base oils. This is a reference, and an introduction to an amazing adventure into the other oils.

Each listing includes:

- Pie chart and fatty acid profile
- Photo of the oil and seed source if available.
- Benefits of the oil
- Notes on scent, suitability, and other useful material.
Almond Oil
Amygdalus communis

Almond oil
Almond oil’s stability, mild odor and light color make it an excellent general purpose carrier oil. It is high in monounsaturated oleic acid and rich in vitamin E and minerals. The high vitamin E content keeps almond oil from oxidizing rapidly, extending the shelf life. Naturally occurring plant sterols help calm redness and support collagen production and skin tissues The relatively generous linoleic acid percentage allows it to absorbs into the skin fairly rapidly.

Almond oil is commonly used in baby products because it is mild and nourishing. An excellent all round oil good for massage blends, aromatherapy essential oil blends, balms, facial serums and skin conditioning.

Substitutions: apricot kernel oil, plum kernel oil, peach kernel oil

- High in vitamin E
- Contains squalene, an important skin lipid
- Contains anti inflammatory plant sterols
- glycosides
- Very emollient and sustaining
- Member of the rose Rosaceae family

Oleic acid 70%
Linoleic acid 25%
Palmitic acid 6%
Stearic acid 2%
Alpha-linolenic 0.4%
Unsaponifiables 1%

Susan M Parker © 2017
Apricot kernel oil

Apricot kernel oil is a mild oil especially good for sensitive skin. It is even typically well tolerated by people with nut allergies. It helps maintain moisture in the skin keeping it soft and healthy. Apricot oil is very similar to almond oil. Apricot kernel oil is excellent for mature skin due to its small percentage of omega 7 palmitoleic acid, a fatty acid.

The oil has the mild bitter almond scent of marzipan. The pleasant, but strong scent isn’t always desirable when creating essential oil blends.

Apricot kernel oil is excellent for massage, skin serums, infusing herbs and flowers, and for sensitive skin conditions.

Substitutions: almond oil, peach kernel oil, plum kernel oil

- High in vitamin E
- Possessing nitrillosides, another name for B17
- Anti inflammatory beta-sitosterol
- Mild almond/marzipan scent
- Emollient, helps preserve moisture
- Member of Rosaceae botanical family

Oleic acid 65%
Linoleic acid 26%
Palmitic acid 5%
Stearic acid 2%
Palmitoleic acid 2%
Alpha-linolenic 1%
Unsaponifiables 0.6%

Susan M Parker © 2017
Argan oil

Argan oil has a beautiful balance of monounsaturated oleic acid and polyunsaturated linoleic acid that gives it protective qualities with fast absorption that doesn’t leave the skin feeling oily. Argan trees are adapted to harsh dry conditions and the oil produced from argan nuts brings these adaptive qualities to skin care, making it a good oil for very dry skin conditions. It is a nutritious oil with generous antioxidant compounds including vitamin E and the provitamin A carotenones. Naturally occurring polyphenols calm inflammation and redness. Argan oil is from Morocco. In the picture above, goats climb an argan tree to eat the nutritious nuts. Argan oil has a strong odor unless deodorized.

Substitutions: baobab oil, kukui oil, sesame oil

- High in vitamin E
- Generous antioxidants, carotenenes
- Contains nourishing polyphenols
- Squalene content
- Can have a strong odor if not deodorized
- Referred to as Liquid Gold by Moroccan’s

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<td>Eicosenoic acid</td>
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<tr>
<td>Unsaponifiables</td>
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Avocado oil

Pressed from the fruit of the avocado, the oil is rich in vitamins, minerals, amino acids as well as cell strengthening phospholipids. This rich oil is perfect for mature skin. It is high in omega 7, palmitoleic acid. Our skin produces this natural fatty acid when young but as we age, oils like avocado help replenish this important skin lipid.

Pro vitamin A carotenoids are powerful antioxidants that help to protect the skin from environmental damage, while plant sterols support the structure of the skin and collagen to maintain skin tone. Excellent for mature skin, exceptionally dry or depleted skin, and for massage.

Illustration above shows two levels of refined oil, the darker one retaining more of the natural plant compounds of the oil.

Substitutions: macadamia nut oil, gevuina or Chilean hazelnut oil.

- High in vitamins B and E
- Contains cell supporting phospholipids
- Pro vitamin A carotenoids
- High in omega 7 Palmitoleic acid
- Phyto sterols support collagen health

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<td>4%</td>
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<tr>
<td>Stearic acid</td>
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Baobab oil

Baobab, called the upside down tree, can live for thousands of years, a quality that brings a similar vitality to the oil produced from the nuts. It is a beautifully balanced oil dominated by oleic and linoleic acids which nourishes skin tissues while the saturated palmitic acid protects against weather and environmental damage.

Vitamins, minerals and other botanical compounds found in the oil make baobab particularly good for cellular regeneration and repair. Plant compounds help support the collagen and skin tissue elasticity, crucial for maintaining a vibrant skin tone. The scent is mild and neutral, ideal as a carrier oil, or as the base and foundation in a formula.

**Substitutions:** argan oil, brazil nut oil

- Provitamin A, carotenoids
- Vitamin E, tocopherol
- Oxidative stability
- Reparative skin damage and UV exposure
- Has its own botanical family **Bombacaceae**
- Called the upside down tree
- Absorbs quickly and deeply

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<tr>
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Camellia seed oil

Camellia seed oil, pressed from the seeds of the tea plant is high in tannins, similar to the tannins found in a cup of tea. The naturally present tannins in camellia seed oil tame the over productive sebaceous glands that cause oily skin. The astringent properties of camellia seed oil helps rebalance, protect and tone oily skin.

It is a clear oil without odor and a dry feel on the skin. These combined properties make it ideal as a carrier oil for essential oil blends. It is rich in polyphenols, vitamins and minerals and squalene, all good skin nourishing properties.

Substitutions: hazel nut oil, almond oil

- Astringent, tannins
- Antioxidants protect against damage
- Oxidative stability
- Vitamins A, B, E & squalene
- Tea, Theaceae, botanical family
- Absorbs with a dry feel
- A popular in its native Japan
- Known as tsubaki oil in Japan

Oleic acid 80%
Linoleic acid 9%
Palmitic acid 9%
Stearic acid 1%
Alpha-linolenic 1%
Arachidic acid 1%
Chia seed oil

Chia seed oil is one of the few oils very high in the omega 3, alpha-linolenic acid which is one of the essential fatty acids. It is a drying oil that is moderately stable against oxidation. Its high polyunsaturated fatty acid content is nourishing to dry, depleted skin.

The amounts of antioxidant compounds in chia seed oil help protect this highly unsaturated oil from oxidation. Anti-inflammatory compounds in chia seed oil contribute healing actions. It is perfect for therapeutic massage oil formula when mixed with less saturated oils. Polyphenols and carotenoids support skin health and help repair damage from all sources.

Substitutions: kiwi seed oil, rose hip seed oil,

- Extremely high omega 3 alpha-linolenic acid
- Generous antioxidants, carotenes
- Relative oxidative stability for its omega 3 content
- Reparative of skin damage, UV exposure
- *Lamiaceae*, mint, botanical family
- Absorbs quickly and deeply
- High in zinc and other minerals

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<td>7%</td>
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<td>Stearic acid</td>
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Cranberry seed oil

Cranberry seed oil has a beautiful complement of fatty acids and is one of the most balanced oils. The oil has generous amounts of the essential fatty acids, linoleic and alpha-linolenic acids that are deeply moisturizing to the skin. The oleic acid helps stabilize the oil and slows oxidation. The oil is also packed with antioxidants and other plant compounds. Provitamin A, carotenes, polyphenols, anthocyanidins and a host of other antioxidants protect against free radical damage. Cranberry is considered one of the dry oils whose tannins help tone the skin and prevent over production of natural oils, important for those with oily skin.

Substitutions: blueberry seed oil, rose hip seed oil

- Phospholipid content
- Generous antioxidants, carotenes, the cyanadins
- Oxidative stability
- Reparative of skin damage and UV exposure
- Balanced fatty acid structure
- Absorbs quickly and deeply
- Same botanical family Vaccinium as blueberry

Linoleic acid  40%
Alpha-linolenic  28%
Oleic acid  24%
Palmitic acid  5%
Stearic acid  1%
Palmitoleic acid  0.5%

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Grape seed oil

Grapeseed oil is a light, fast absorbing oil high in linoleic acid. It is rich in vitamins and minerals that protect and nourish the skin.

Grapeseed oil contains the flavonol proanthocyanidin which acts to help strengthen and support collagen and elastin in the underlying skin tissues. Grape seed oil is mild with little to no scent however it comes in a wide range of color from almost clear to deep green depending on the source of the grape seeds used and the level of refinement. Astringent properties make this a dry oil, protective and penetrating without leaving an oily or greasy feel. It contains naturally occurring vitamin E which protects against damage and helps repair and nourish the tissues.

Substitutions: safflower oil, passion fruit seed oil, cucumber seed oil.

- Tannins make it an astringent dry oil
- Vitamin and minerals
- Proanthocyanidin are anti inflammatory
- High in vitamin E
- Absorbs quickly and deeply
- Mild for sensitive skin

Linoleic acid 75%
Oleic acid 20%
Palmitic acid 8%
Stearic acid 5%
Alpha-linolenic 2%
Palmitoleic acid 0.6%
Hazelnut oil

Oleic acid makes up 75% of hazel nut oil, that, combined with tannins naturally present in the oil make it slightly astringent. Hazel nut oil is mild with minimal odor, ideal as a neutral base for essential oils. You can also use hazelnut oil in cooking. The tannins benefit the skin promoting circulation while the generous squalene content nourishes skin lipids.

Hazelnut oil is especially good for oily skin with over active sebaceous glands. It helps to calm oil production and tighten the pores. It is considered a dry oil, penetrating without leaving an oily or greasy feel. High vitamin E content protects against oxidative damage and helps repair and nourish the tissues.

Substitutions: camellia oil, almond oil, marula oil.

- Tannins make it an astringent dry oil
- Vitamin and minerals
- Beta sitosterol calms inflammation
- High in vitamin E
- Absorbs quickly and deeply
- Mild for sensitive skin
- Contains squalene

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<td>3%</td>
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<tr>
<td>Unsaponifiables</td>
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Hemp seed oil

Hemp seed oil has an unusual range of fatty acids that make it highly nourishing and healing, including beneficial GLA and SDA.

GLA is anti-inflammatory helping to reduce redness and support the skin’s innate immune system. While SDA’s highly unsaturated structure aids in treating skin blemishes and other inflammatory skin conditions. Stearidonic fatty acid has a highly unsaturated structure, that combined with linoleic and alpha-linolenic acids creates an oil with powerful skin healing properties.

Substitutions: blackberry seed oil, rose hip seed oil

› Absorbs well
› GLA fatty acid for inflammation
› Stearidonic acid anti inflammatory and bridge FA
› Reparative of skin damage
› Protective of skin
› Called “nature’s perfectly balanced oil”

Linoleic acid 55%
Alpha-linolenic 20%
Oleic acid 14%
Palmitic acid 7%
Stearic acid 3%
Gamma linoleic acid C18:3 4%
Arachidic acid C20:0 2%
Stearidonic acid C18:4 2%
Jojoba oil
Yes, it’s a wax and technically not an oil, but it is liquid at room temperatures and we use it in the same manner as true oils. Jojoba’s very long chains of fatty acids are linked by ester bonds and not triglycerides. It has a similar fatty acid composition to meadowfoam seed oil (which is a true oil) making these two interchangeable in formulas.

Jojoba oil has a similar structure to the skin’s natural sebum. This makes it highly compatible with most skin types. Jojoba’s ability to absorb into the top layers of skin is an added, if unexpected bonus for this oil. High in vitamin E, jojoba supplies antioxidant protection against environment and weather. It is a light colored oil with no aroma. An all purpose oil for skin care and a carrier oil for essential oil blends.

Substitutions: Meadowfoam seed oil

- 82% very-long chain fatty acids
- Generous antioxidants
- Extreme oxidative stability
- Reparative of skin damage and UV exposure
- High in vitamin E
- Absorbs and protects

Eicosenoic acid C20:1 65%
Erucic acid C22:1 16%
Oleic acid C18:1 13%
Palmitic acid C16:0 3%
Palmitoleic acid 1%
Kukui nut oil

Harvested from the state tree of Hawaii, kukui is also called candle nut because of its oil rich kernels that the ancient Hawaiians burned for light. Kukui nut oil is high in linoleic and alpha-linolenic essential fatty acids. The high percentages of these two essential fatty acids gives kukui nut oil the ability to balance deficiencies in the skin. The oil has a favored place in Hawaii where it is used for massage, skin conditioning, sunning and on babies and new borns for protection from the elements.

Kukui nut oil is rich in vitamins, minerals and antioxidant compounds that protect the skin from sun, salt and weather. Oils like kukui, high in the essential fatty acids help treat skin conditions like eczema, psoriasis and dermatitis. The oil is light in color with little odor.

Substitutions: blackberry seed oil, raspberry seed oil, rose hip seed oil

- Generous antioxidants, carotenes
- Reparative of skin damage and UV exposure
- Pale color with little to no scent
- Absorbs quickly and deeply
- Moisturizes and protects

Linoleic acid  45%
Alpha-linolenic  32%
Oleic acid  20%
Palmitic acid  8%
Stearic acid  5%
Arachidonic acid 20:4  1.5%
Macadamia nut oil

Macadamia nut oil is rich in oleic acid and is a good oil for skin protection. It is high in palmitoleic acid (20%) which is a building block fatty acid for the skin. It is also anti-microbial, helping heal wounds and minimize cellular breakdown. Antioxidants in the oil help protect against environmental damage including UV damage to the skin. Phytosterols protect, aiding in skin recovery by helping reduce itchiness and inflammation. Macadamia nut oil can have a pronounced nutty scent that is hard to overcome if used too high a percentage in a formula. It is an excellent massage oil, great for mature skin and damaged skin.

Substitutions: avocado oil, apricot kernel oil

- Omega 7, palmitoleic acid, 16 to 23%
- Generous antioxidants
- Oxidative stability
- Reparative of skin damage and UV exposure
- Absorbs well into the skin
- Good for massage and skin conditioning
- Can have a nutty scent

Oleic acid 60%
Palmitoleic acid Palmitic acid 20%
Stearic acid 8%
Arachidic acid C20:0 4%
Linoleic acid 2%
Eicosenoic acid C20:1 2%
Meadowfoam Oil

*Meadowfoam Seed oil*

Meadowfoam seed oil is made up of unusual very long chain fatty acids. It is similar to jojoba ‘oil’ in structure and use. It is an unsaturated oil that has an exceptionally long shelf life because the long fatty acid chains are resistant to oxidation. This helps keep the oil fresh, and it even helps stabilize other more delicate oils in formulas.

In skin care, the very long chains supply trace fatty acids that protect and nourish the skin. It is penetrating and fast absorbing. Meadowfoam seed oil is high in vitamin E adding antioxidant protection to formulas.

It is a light color oil with no aroma, perfect as a base or carrier oil for blending essential oils. Adding meadowfoam seed oil helps extend the shelf life of other oils in a blend.

**Substitutions:** Jojoba oil

- 96% Very long chain fatty acids
- Generous antioxidants
- Extreme oxidative stability
- Reparative of skin damage and UV exposure
- High in vitamin E
- Absorbs and protects

**Fatty Acid Composition:**

- Gadoleic acid C20:1 62%
- Brassic acid C22:2 18%
- Erucic acid C22:1 13%
- Oleic acid C18:1 3%

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Passion fruit oil is high in polyunsaturated linoleic acid. In herbal medicine, passion flower is sedative and a calming medicine and the oil of passion fruit seeds act similarly, calming and relaxing skin tissues. The oil is high in minerals that contribute to its calming properties.

Add passion fruit seed oil to massage oils to help relax sore or stiff muscles. Passion fruit is high in vitamin C, and that may contribute vitamin like benefits to the skin. Passion fruit seed oil is wonderful in face and body oils, massage oils and calming essential oil blends. It is native to the Amazon where it grows across tropical and temperate regions. The oil is mild with a light fruity scent. In its native South America, you can find it under its common name Maracuja.

Substitutions: safflower oil, grape seed oil, cucumber seed oil.

- Generous mineral content, calcium and phosphorus
- High vitamin C fruit
- Absorbs well into the skin
- Mild for sensitive skin
- Relaxing and calming to skin tissues

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<td>Stearic acid</td>
<td>2%</td>
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<tr>
<td>Alpha-linolenic</td>
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Plum kernel oil

Plum kernel oil is high in monounsaturated oleic acid. It is a, light, stable oil ideal as a base or carrier oil for skin care formulas and essential oil blends. It is mild and gentle, sometimes with a pronounced nutty marzipan scent. Naturally occurring plant sterols calm redness and support collagen production in the skin. Plum kernel oil has a twenty percent linoleic acid content that helps the the oil absorb into the skin fairly rapidly without feeling oily. Plum kernel oil has a rich silky feel and it is high in vitamin E and minerals. Small amounts of very long chain fatty acids support the skin. As a carrier it has a pronounced scent so you may want to combine it with other carrier oils to create a neutral base for blending. Substitutions: apricot kernel oil, almond oil, peach kernel oil

- High in vitamin E
- Good for massage
- Rosaceae botanical family
- Mild and gentle oil for sensitive skin
- Emollient and sustaining

Oleic acid 70%
Linoleic acid 20%
Palmitic acid 6%
Stearic acid 2%
Alpha-linolenic 1%
Palmitoleic acid 0.5%
Plus small amounts of Arachidic, Myristic, Eicosenoic, Behenic, Erucic, Lignoceric and Margaric acids and unsaponifiables
Pomegranate Oil

Punica granatum

Pomegranate seed oil

Pomegranate seed oil is highly unusual, primarily composed of punicic acid. Punicic acid is unique to pomegranate seed oil. It is a natural conjugated trans fatty acid that causes the oil to feel thick and viscous. Mix it with other, lighter oils to counteract the thick, viscous feel.

Punicic acid is anti-inflammatory, anti-microbial and cell regenerating. Its ability to support collagen health is an extra boon for mature skin and skin that has thinned prematurely. Plant hormones found in the nutritional compounds of the fruit help to keep skin toned and plumped.

The photo above shows two pomegranate seed oils; one very lightly processed and highly scented the other refined for cosmetic use.

Substitutions: Sandalwood seed oil

- High in Punicic acid, thickens skin
- Phyto, plant, hormones, and sterols
- Antioxidant rich
- Reparative of skin damage and UV exposure
- Provides collagen support
- Thick and viscous, better if diluted

Punicic acid 78%
Linoleic acid 7%
Oleic acid 6%
Palmitic acid 2%
Stearic acid 1%
Raspberry seed oil

Raspberry seed oil contains high percentages of polyunsaturated fatty acids that help this oil penetrate the skin deeply, rapidly, and completely. The oleic acid balances these two polyunsaturated fatty acids, adding to its protective and reparative qualities. Unrefined raspberry seed oil smells ever so slightly of the fruit and has a pale amber color.

Carotenoids, pro-vitamin A botanical compounds help protect the skin from environmental exposure and sun damage. It is NOT a sun screen because it doesn’t shield the skin from the sun but it helps protect the tissues from radiation damage. The high percentages of antioxidants nourish and protect the skin and help extend the oil’s shelf life.

**Substitutions:** blackberry seed oil, rose hip seed oil

- Generous antioxidants, carotenoids
- Oxidative stability
- Reparative of skin damage and UV exposure
- Rosaceae plant family
- Absorbs quickly and deeply

- Linoleic acid 52%
- Alpha-linolenic 22%
- Oleic acid 11%
- Palmitic acid 2%
- Stearic acid 1%
Rose hip seed oil

Rose hip seed oil has antioxidant and other plant compounds that repair and nourish the skin. It is exceptionally good for minimizing and preventing scarring and its reparative, cell rejuvenating properties make it a popular ingredient in anti-aging serums and facial oils. Rose hip seed oil varies in color as you can see in the photo top right. The less refined organic versions carry more of the nourishing and antioxidant compounds than the paler, more highly refined versions. Unrefined rose hip seed oil often has strong smell. Use small amounts to your formula to add healing benefits without adding too much odor.

Substitutions: blackberry seed oil, raspberry seed oil

- Prevents scarring and repairs old damage
- Generous antioxidants, carotenes
- Balanced fatty acid profile
- Reparative of skin damage and UV exposure
- Rosaceae plant family, also called Rosa Mosqueta and originally from Chile
- Absorbs quickly and deeply

Linoleic acid  44%
Alpha-linolenic  33%
Oleic acid  15%
Palmitic acid  4%
Stearic acid  2%
Arachidic acid  1%
Myristic acid  0.5%
Sesame seed oil

Sesame seed oil has two unique antioxidant compounds, *sesamin* and *sesamol*. It is also high in linoleic acid, a fatty acid that usually indicates a shorter shelf life, but these two unique antioxidants help protect the oil from rancidity. The dominant percentage of linoleic acid in sesame oil helps it absorb well into the skin. Unrefined sesame oil has a mild nutty scent. Be careful not to confuse it with the toasted sesame oil used in Asian cooking or your formulas will end up smelling more edible than you might want. Sesame oil is good for infusing herbs and flowers, as a base in massage oil blends, skin conditioning, facial serums and it is a staple in Ayurvedic health practices.

**Substitutions:** argan oil, baobab oil, rice bran oil

- Sesamin and sesamol antioxidants
- Generous linoleic acid
- Oxidative stability
- Reparative of skin damage and UV exposure
- Moisturizing
- Absorbs quickly and deeply
- Ayurvedic lifestyle practices

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<tr>
<td>Palmitoleic acid</td>
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Tamanu oil has a distinctive herbal scent and is typically thick and gloppy or brighter green and fairly liquid depending on the source and how refined it is. The glyco-lipids, starches that bind to the oil give it a smooth slippery pasty feel unlike any other oil I’ve come across.

Tamanu oil has a well earned reputation for healing and is valued for it’s ability to resolve topical skin conditions and as well as underlying issues like sciatica and inflammatory conditions. Even small amounts of this viscous green oil add healing repairing properties to formulas. Tamanu oil comes from the Pacific basin region.

Substitutions: rose hip seed for repair, black seed oil for inflammation.

- High phospholipid content
- Glyco-lipids help repair and regenerate skin
- Absorbs deeply into the body
- Helps alleviate pain and muscle soreness
- Helps prevent and repair scarring
- Nutty herbal scent

Oleic acid 49%
Linoleic acid 21%
Palmitic acid 15%
Stearic acid 12%
Myristic acid 3%
Alpha-linolenic 1%
Eicosenoic acid 1%
Caulophyllic acid unique to this oil, % unknown
**Glossary & terms**

**Carotenoids**: phyto elements that play a major role in protecting cells and tissues from sunlight as well as playing a large role as antioxidants in food and in the body. Carotenoids include beta-carotene, lycopene, alpha carotene, lutein, anthaxanthin, and zeaxanthin.

**Carrier principle**: refers to a substance that carries another substance; as an example, a vegetable oil acting as a carrier for an essential oil. Antonym: active principle.

**Collagen**: One third of the body’s connective tissue of the skin is made of collagen. The aging process takes place when the collagen becomes insoluble and incapable of absorbing moisture.

**Conjugated fatty acids** have both cis and trans configuration naturally, causing oils to be fuller feeling than the more normal cis configuration of fatty acids.

**Antioxidant**: inhibits the oxidation process by reducing the number of free radical oxygen molecules that are released in biochemical reactions, which damage cell membranes. Examples include vitamins E, C, rosemary extract, and carotenoids.

**Beta-carotene**: the precursor of vitamin A from plant sources and an antioxidant carotenoid. It can also be used as a natural colorant.

**Beta-Sitosterol**: a phytosterol (plant sterol) that has been shown to lower serum cholesterol levels. It is found in the unsaponifiable portion of oils and fats.

**Dry oils**: oils that contain tannins and have a dry feeling on the skin, not an oily feeling.

**Drying oils**: oils containing a significant percentage of poly unsaturated fatty acids, that oxidize and dry to the touch over time.

**Emollience**: describes substances that soften and soothe the skin.

**Essential Fatty Acids, EFAs**: Fats that cannot be synthesized in the body but must be taken into the body in the form of food. There are two EFAs, linoleic and alpha-Linolenic acids. Also named vitamin F, which is seldom used.
**Essential nutrients:** are necessary nutrients, catalysts, and cofactors that must be taken in by the body in foods. This includes the vitamins, minerals, eight amino acids, **essential fatty acids**, air, sunlight and water.

**Fatty acids (FAs):** long chains of varying numbers of carbon atoms with hydrogen atoms connected to most or all of the carbon atoms that make up 90% or more of oil.

GLA, **gamma-Linolenic acid**: made from the essential fatty acid linoleic acid in the body. Necessary for the production of prostaglandins, a hormone-like substance required for healthy functioning of the body. GLA was originally discovered in evening primrose oil, but also found to be particularly high in borage seed oil and black currant seed oils.

**Linoleic Acid (LA):** one of two essential fatty acids that need to be consumed in the diet, an omega 6 fatty acid.

**Lipids:** the saponifiable portion of fats, oils, or waxes, the fatty acids and triglycerides. They are primarily hydrocarbon-like and insoluble in water.

**Long-chained fatty acids:** carbon chain lengths from fourteen to eighteen carbon atoms.

**Medium-chained fatty acids:** fatty acid chains with carbon lengths from eight to twelve carbon atoms.

**Monounsaturated:** oils that have only one carbon-to-carbon double bond in the fatty acid chain. **MUFA:** monounsaturated fatty acid.

**Nitrilosides:** vitamin B-17, from apricot kernels and other plant seeds. They are a part of laetrile therapy.

**Oil:** a term for lipids and non-lipid compounds produced by seeds and nuts of the plant world, and which also includes animal and petrochemical oils.

**Oxidation:** a process similar to combustion that happens in the presence of oxygen in biochemical reactions. In the body, free radical oxygen molecules cause damage at the cellular level.

**Oxidative stability:** The ability of oil to remain fresh for an extended period of time.

**Palmitoleic acid** omega 7 monounsaturated fatty acid is important for skin health and balance. Made by the skin, its production diminishes with age so replenishing it externally is helpful.

**Phenolic compounds:** a class of chemical compounds produced by plants and microorganisms. that respond to environmental conditions, UV radiation, insects, and damaged tissues. Polyphenols means multiple phenols. Phenolic compounds can also be industrially synthesized.

**Phospholipids:** lipid compounds found in living cells of animals and plants, which are important for healthy skin and body cells. Lecithin is a well-known phospholipid.

**Phyto:** the Latin word for plant.

**Phytosterols:** the vegetable analogues of cholesterol, phytosterols are essential cell membrane components and necessary for an efficient immune system. Beta-Sitosterol, Sitosterol, Campesterol, Stigmasterol, and Sitostanol are examples of some found in oils.

**Polyunsaturated:** oils that have at least two carbon-to-carbon double bonds in their fatty acid chain. This makes them prone to oxidation.
**Saturated fatty acid:** refers to the fact that all the carbon atoms of the fatty acid chain are saturated with hydrogen atoms. This includes plant butters that are generally solid at room temperature, animal fats, lauric, palmitic, and stearic acids are saturated fatty acids.

**Sebaceous glands:** glands in the skin that are attached to hair follicles and produce a fine protective film of lipids to protect the skin. The “acid mantle” is another name for this film. **Sebum:** the fatty, or lipid, product of the skin that is produced by the sebaceous glands that serves to lubricate and protect the skin from the environment by holding moisture in the skin layer.

**Squalene:** a natural part of our skin sebum or lipids, produced by the sebaceous glands in the epidermis. Vegetable sources of squalene are found in olive oil, wheat germ oil, and rice bran oils. Animal sources include shark liver.

**Stearic acid:** a saturated fatty acid occurring naturally in tallow and other animal fats and vegetable oils. Hard and waxy it is often used in soap and cosmetics for its hardness.

**Stigmasterol:** known as the anti-stiffness factor, a phytosterol found in significant quantities in shea butter’s unsaponifiable portion.

**Triglycerides:** three fatty acid molecules and one glycerol molecule, the major component of oils and fats.

**Unsaturated fatty acids:** those where carbon chains are missing hydrogen atoms in several places. These are oils that are liquid at room temperature and usually derived from vegetable sources. Oleic, linoleic, linolenic, palmitoleic, gamma-Linolenic acid are some of the unsaturated fatty acids.

**Very-long-chained fatty acids:** those with carbon chain lengths of twenty carbon atoms and above.

**Vitamin A:** a necessary vitamin that is initiated by pro-vitamin A compounds in foods and plants. Carotenoids act as pro-vitamin A compounds, transforming to vitamin A in the body. Helpful for skin conditions such as acne.

**Vitamin C:** a necessary nutrient for the health of the skin and body. One of the essential nutrients, vitamin C protects cell walls, supports collagen health, and aids in skin repair. May or may not be found in oils as it is water soluble.

**Vitamin E:** a family of related phenolic compounds that act as antioxidants and serve to protect cells. Added to oils to prolong their shelf life. Grouped in three branches, they are tocopherols, tocotrienols, and tocomonoenols.

**Wax:** a class of lipids that is non-polar and does not contain a glycerol compound. Fatty acids are bound by ester bonds. Jojoba ‘oil’ is considered a wax for this reason.