

## Marula Oil

Naturally Stable Emollient for a Softer You



INCI Name: *Sclerocarya birrea* Seed Oil  
SAP Code#: 136070

### Key Product Attributes:

- ECOCERT approved
- Moisturizing
- Contains essential fatty acids
- Extremely stable in cosmetic formulations
- Antioxidant properties

### Background Information

The Marula tree (*Sclerocarya birrea*) is native to East, South and Central Africa. It is one of the most highly valued indigenous wild fruit trees among the black tribes of Southern Africa. The fruit, which is roughly plum-sized, contains kernels rich in oil. Lonza Personal Care has developed a high natural antioxidant content oil derived from Marula kernels.

## A Social Mission

### Empowering Poor Communities

Our supplier of Marula Oil works to achieve ethical trade with local producers, a sustainable and traceable harvesting process, and to be able to offer highly purified and cold-pressed virgin-grade marula oil.

Most of the pulp is processed by hand, and about 30% is done mechanically. The nuts from the fruit are returned to the communities for hand cracking. The women can do this whenever it is convenient, and in the volumes that suit the participants. The scooped-out nuts or kernels are bought back from the laborers, who get paid per kg of product.

Participation in this marula project is based on self-selection and it is transaction based. The relationship between our supplier and the rural women is such that it empowers people rather than create dependency.

## Folkloric Uses

- Medicinal uses: the bark is used to treat ailments like stomach ache, measles, fever, boils and diarrhea. It is mixed with other medicinal plants to treat malaria, syphilis, leprosy and rheumatism.
- Local tribes use oil from its kernel for cosmetic purposes, to protect and heal cracked, dry or damaged skin and as nose and eardrops. Also used for hair care to protect, moisturize and impart shine.
- Used to make jams, jellies and wines.
- Believed to be a strong aphrodisiac, the Marula tree is featured prominently in many tribal fertility rites. In ancient folklore, it was known as the marriage tree. The ground bark of the tree is used by expectant mothers to determine the sex of their babies.
- Dried marula nuts from the fruit are used to make a necklace, which is seen as a symbol of love, or another way to say “I am nuts about you!”.

## Fruit

The fruit of the Marula is described as having an exotic flavor and high nutritive value. The fruit is white and fleshy. An outstanding feature of the composition of the fruit is its high vitamin C content, which is believed to be four times the amount in an average orange. The highest vitamin C content was found in the fruit juice of Marula by Fox and Stone [1938], giving the following interesting comparison:

## Product Information

Miligram of vitamin C present in 100ml of different beverages <sup>1</sup> :	
Orange Juice	50.0
Milk	2.0
Home-brewed beer	0.8
Marula "beer"	100.00
Marula fruit juice	200.00

The stone within the Marula fruit contains several kernels, which are rich in oil. Marula Oil is presently extracted by the local farmers using simple pressing and filtration techniques. No solvents are used, giving it a high purity for cosmetic applications.<sup>2</sup> Marula Oil is rich in oleic acid, which is an essential component in the maintenance of healthy skin. The oil is generally very stable. Marula Oil has also been found to significantly improve skin hydration and smoothness, showing that it is absorbed well through the skin. The combination of high nutritional value and excellent stability makes it an ideal choice for modern cosmetic formulas.

## Oil Composition

The fatty acid profile of Marula Oil has been found to be similar to that of olive oil.<sup>3</sup> The high mono-unsaturated content (C18: 1 ~72%) suggests that the oil should have a good oxidative stability. The stability of plant oils is influenced by the fatty acid composition (e.g. C18: 1 / C18: 2 ratio) and the presence of natural anti-oxidants of which the tocopherols are the most important. The tocopherol content showed that the main component is g-tocopherol (average 22 mg per 100 g oil). The level of total tocopherols of standard Marula Oil, which can be classified as a high oleic-acid oil, is ~26 mg per 100 g oil.

## Fatty Acid Percentage

Fatty Acid % Composition of Marula Oil	
C16:0 (Palmitic)	9.0–12.0%
C18:0 (Stearic)	5.0–8.0%
C18: 1 (Oleic)	70–78%
C18: 2 (Linoleic)	4.0–7.0%
C18: 3 (ALA)	0.1–0.6%
C18: 3 (GLA)	0
C20+	0.5–0.9%

Typical Properties	
Appearance	Pale yellow
Color (Gardner)	5 Maximum
Odor	Bland
Iodine Value	74–100
Fatty Free Acid Content (% as oleic)	<4%
Peroxide Value	<4
Recommended Use Levels	1.0–10.0%

## Applications

- Hair care products: Leave-in treatment, scalp conditioners, hair lotions
- Skin care products: Moisturizing lotions, body butters
- Make-up formulations: Eye shadow, lip treatment

## References:

1. Irmgard von Teichman “Notes on the distribution, morphology, importance and use of the indigenous Anacardiaceae. The importance and uses of *Sclerocarya birrea* (The Marula) 1983, 2 – 7.
2. Chris Houghton, *New Natural Oils and their Properties*. [http://www.atalink.co.uk/usb2000/html/art\\_rawmats\\_anglia.htm](http://www.atalink.co.uk/usb2000/html/art_rawmats_anglia.htm).
3. R.R. B Leakey, “Potential for Novel Food Products from Agroforestry Trees: A Review” 1999, 8-9

#### **USA**

Lonza Consumer Care  
70 Tyler Place  
South Plainfield, NJ 07080  
Tel +1 908 561 5200

#### **Switzerland**

Lonza Ltd  
Muenchensteinerstrasse 38  
4002 Basel  
Tel +41 61 316 81 11

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