

## CERTIFICATE OF ANALYSIS

<b>Product Name</b>	<b>MACADAMIA NUT OIL</b>
<b>Botanical Name</b>	Macadamia integrifolia
<b>Product Code</b>	PCO4011
<b>CAS #</b>	129811-19-4; 128497-20-1
<b>INCI Name</b>	Macadamia integrifolia (Macadamia) Seed Oil

<b>Batch #</b>	40112108
<b>Manufacturing Date</b>	AUGUST 2021
<b>Best Before Date</b>	JULY 2023

<b>Part Used</b>	Nuts
<b>Extraction Method</b>	Cold Pressed
<b>Quality</b>	100% Pure and Natural

<u>PROPERTIES</u>	<u>SPECIFICATIONS</u>	<u>RESULTS</u>
<b>Appearance</b>	Pale yellow to golden colored liquid	CONFORMS
<b>Odour</b>	Characteristic mild nutty odour	CONFORMS
<b>Refractive Index</b>	1.460 - 1.479 @ 20°C	1.467
<b>Specific Gravity (g/mL)</b>	0.905 - 0.929 @ 25°C	0.917
<b>Saponification Value (mgKOH/g)</b>	190 - 200	195
<b>Unsaponifiable Matter (%)</b>	Maximum 1.5%	CONFORMS
<b>Peroxide Value (meq O<sub>2</sub>/kg)</b>	Less than 4.0	CONFORMS
<b>Iodine Value (g I<sub>2</sub>/100g)</b>	67 - 87	75
<b>Acid Value (mgKOH/g)</b>	Less than 1.0	CONFORMS
<b>Solubility</b>	Soluble in cosmetic esters and fixed oils; Insoluble in water	CONFORMS

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### **FATTY ACID COMPOSITION:**

<b><u>FATTY ACID</u></b>	<b><u>C-CHAIN</u></b>	<b><u>SPECIFICATIONS (%)</u></b>	<b><u>RESULTS (%)</u></b>
Palmitic Acid	C16:0	7.00 – 10.00	8.20
Palmitoleic Acid	C16:1 (n-7)	14.00 – 23.00	20.10
Stearic Acid	C18:0	2.00 – 5.50	2.70
Oleic Acid	C18:1 (n-9)	53.00 – 67.00	57.90
Linoleic Acid	C18:2 (n-6)	1.00 – 5.00	2.90
Arachidic Acid	C20:0	1.00 – 3.00	1.90
11-Eicosenoic Acid	C20:1 (n-9)	1.00 – 3.00	2.50
Behenic Acid	C22:0	Maximum 1.0	0.70

<b><u>MICROBIAL ANALYSIS</u></b>	<b><u>SPECIFICATIONS</u></b>	<b><u>STANDARDS</u></b>	<b><u>RESULTS</u></b>
Aerobic Mesophilic Bacterial Count	< 100 CFU/g	ISO 21149	CONFORMS
Yeast and Mould	< 10 CFU/g	ISO 16212	CONFORMS
Candida albicans	ABSENT / 1g	ISO 18416	CONFORMS
Escherichia coli	ABSENT / 1g	ISO 21150	CONFORMS
Pseudomonas aeruginosa	ABSENT / 1g	ISO 22717	CONFORMS
Staphylococcus aureus	ABSENT / 1g	ISO 22718	CONFORMS

<b><u>HEAVY METAL TESTS</u></b>	<b><u>SPECIFICATIONS</u></b>	<b><u>STANDARDS</u></b>	<b><u>RESULTS</u></b>
Lead: Pb (mg/kg or ppm)	< 10 ppm	na	CONFORMS
Arsenic: As (mg/kg or ppm)	< 2 ppm	na	CONFORMS
Mercury: Hg (mg/kg or ppm)	< 1 ppm	na	CONFORMS

### **STABILITY AND STORAGE:**

Keep in tightly closed container in a cool and dry place, protected from sunlight. When stored for more than 24 months, quality should be checked before use.

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