

CERTIFICATE OF ANALYSIS

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

Batch #	LOT0022277
Manufacturing Date	DECEMBER 2025
Best Before Date	DECEMBER 2027

Part Used	Nuts
Extraction Method	Cold Pressed
Quality	100% Pure and Natural

PROPERTIES	SPECIFICATIONS	RESULTS
Appearance	Clear - light yellow oily liquid	CONFORMS
Colour Lovibond (5.25" CELL)	<20Y, <2.0R	12.0Y, 1.1R
Odor	Odourless	CONFORMS
Specific Gravity @ 20°C	0.910 – 0.930	0.915
Refractive Index @ 20°C	1.465 – 1.470	1.467
Saponification Value (mgKOH/g)	188.0 – 200.0	192.0
Unsaponifiable Matter (%)	< 1.5	0.8
Free Fatty Acid (% as oleic)	< 1.0	0.1
Peroxide Value (meq O₂/kg)	<10.0	1.7
Iodine Value (gI₂/100 gr)	70.0 – 85.0	81.0

FREE FATTY ACID COMPOSITION:

<u>FATTY ACID</u>	<u>C-CHAIN</u>	<u>SPECIFICATIONS (%)</u>	<u>RESULTS (%)</u>
Palmitic Acid	C16:0	6.00 – 12.00	11.40
Palmitoleic Acid	C16:1	9.00 – 20.00	9.50
Stearic Acid	C18:0	2.00 – 8.00	3.50
Oleic Acid	C18:1	50.00 – 67.00	64.60
Linoleic Acid	C18:2	3.00 – 7.00	6.00
Linolenic Acid	C18:3	<3.00	0.10
Arachidic Acid	C20:0	<5.00	1.60
Eicosenoic Acid	C20:1	<3.00	1.40
Behenic Acid	C22:0	<2.00	0.80
Lignoceric Acid	C24:0	<2.00	0.30

Shelf life is guaranteed for three years from the date of production if the product is stored in the unopened original container between 15°C - 30°C, protected from light. Because this material is sensitive to oxidation, it is saturated with nitrogen and sealed with nitrogen atmosphere for protection. If containers are opened for sampling, be sure to refill atmosphere with nitrogen. Containers that have been opened should be tested at least yearly to ensure potency. Although we believe the above information to be accurate based on the information available to Avena Lab, it is the responsibility of the customer and user of the material to perform its own investigation and due diligence prior to use to verify that the product purchased from Avena Lab meets their quality requirements and is appropriate for the use to which the product is to be put. The information provided above shall be considered effective only for the lot with which the information is being provided. Use and purchase of this material is subject to Avena Lab standard terms and conditions, which supersede any conflicting terms contained on Buyer's purchase order or any document or instrument supplied by Buyer.

<u>MICROBIAL ANALYSIS</u>	<u>SPECIFICATIONS</u>	<u>STANDARDS</u>	<u>RESULTS</u>
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

<u>HEAVY METAL TESTS</u>	<u>SPECIFICATIONS</u>	<u>STANDARDS</u>	<u>RESULTS</u>
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.

As it is electronically generated document, hence no signature required.

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