

### CERTIFICATE OF ANALYSIS (COA)

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

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

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

### FREE ACID COMPOSITION

FATTY ACID	C-CHAIN	SPECIFICATIONS (%)	RESULTS (%)
Palmitic Acid	C16:0	6.00 – 15.00	8.10
Palmitoleic Acid	C16:1 (n-7)	14.00 – 23.00	19.70
Stearic Acid	C18:0	2.00 – 5.50	2.50
Oleic Acid	C18:1 (n-9)	53.00 – 67.00	60.20
Linoleic Acid	C18:2 (n-6)	1.00 – 5.00	3.90
Alpha-Linolenic Acid	C18:3 (n-3)	1.00 – 3.00	1.70
11-Eicosenoic Acid	C20:1 (n-9)	1.00 – 3.00	2.40
Behenic Acid	C22:0	Maximum 1.0	0.70

MICROBIAL ANALYSIS	<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

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