

### CERTIFICATE OF ANALYSIS (COA)

Product Name	MORINGA OIL
Botanical Name	Moringa oleifera
CAS #	93165-54-9
EINECS #	296-941-1
INCI Name	Moringa Oleifera Seed Oil

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

<u>PROPERTIES</u>	<u>SPECIFICATIONS</u>	<u>RESULTS</u>
Appearance	Pale yellow to greenish golden colored liquid	CONFORMS
Odour	Characteristic mild, pleasant odour	CONFORMS
Refractive Index	1.460 - 1.480 @ 20°C	1.4696
Specific Gravity (g/mL)	0.910 - 0.920 @ 20°C	0.9110
Saponification Value (mgKOH/g)	180 - 200	189
Peroxide Value (meqO <sub>2</sub> /kg)	Max 10.0	1.26
Iodine Value (g I <sub>2</sub> /100g)	80 - 106	88
Acid Value (mgKOH/g)	Max 2.0	0.44
Moisture	Max 0.1	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	5.00 – 13.00	11.00
Palmitoleic Acid	C16:1 (n-7)	Maximum 3.5	0.90
Stearic Acid	C18:0	2.00 – 6.00	2.70
Oleic Acid	C18:1 (n-9)	60.00 – 85.00	65.10
Linoleic Acid	C18:2 (n-6)	0.1- 14.00	13.98
Arachidic Acid	C20:0	Maximum 2.0	0.50
Eicosenoic acid	C20:1 (n-9)	Maximum 3.0	0.20
Behenic Acid	C22:0	Maximum 4.0	0.20

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

Disclaimer & Caution: Please refer to all relevant technical information specific to the product, prior to use. The information contained in this document is obtained from current and reliable sources. INDO BIO ORGANICS provides the information contained herein, but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. The user of the product is solely responsible for compliance with all laws and regulations applying to the use of the product, including intellectual property rights of third parties. As the ordinary or otherwise use(s) of this product is outside the control of INDO BIO ORGANICS, no representation or warranty - expressed or implied - is made as to the effect(s) of such use(s), (including damage or injury), or the results obtained. The liability of INDO BIO ORGANICS is limited to the value of the goods and does not include any consequential loss. INDO BIO ORGANICS shall not be liable for any errors or delays in the content, or for any actions taken in reliance thereon. INDO BIO ORGANICS shall not be responsible for any damages resulting from the use of or reliance upon this information.