

CERTIFICATE OF ANALYSIS (COA)

Product Name	BITTER OIL
Botanical Name	Momordica charantia
INCI Name	Momordica Charantia (Bitter Gourd) Seed Oil

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

<u>PROPERTIES</u>	<u>SPECIFICATIONS</u>	<u>RESULT</u>
Appearance	Pale yellow to golden brown colored liquid	CONFORMS
Odour	Characteristic mild odour	CONFORMS
Refractive Index	1.450 - 1.490 @ 20°C	1.474
Specific Gravity (g/mL)	0.900 - 0.930 @ 20°C	0.915
Saponification Value (mgKOH/g)	160 – 190	173
Peroxide Value (meq O ₂ /kg)	Less than 5.0	CONFORMS
Iodine Value (g I ₂ /100g)	90 - 120	CONFORMS
Acid Value (mgKOH/g)	Less than 1.0	CONFORMS
Solubility	Soluble in cosmetic esters and fixed oils; Insoluble in water	CONFORMS

FATTY ACID COMPOSITION:

FATTY ACID	C-CHAIN	SPECIFICATIONS (%)	RESULTS
Palmitic Acid	<u>C16:0</u>	<u>2.00 – 14.00</u>	<u>2.20</u>
Stearic Acid	<u>C18:0</u>	<u>20.00 – 35.00</u>	<u>23.90</u>
Oleic Acid	<u>C18:1 (n-9)</u>	<u>3.00 – 9.00</u>	<u>7.90</u>
Linoleic Acid	<u>C18:2 (n-6)</u>	<u>50.00 – 65.00</u>	<u>14.40</u>
Alpha-Linolenic Acid	<u>C18:3 (n-3)</u>	<u>Maximum 2.00</u>	<u>50.40</u>

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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