

### CERTIFICATE OF ANALYSIS (COA)

Product Name	NEEM OIL
Botanical Name	Azadirachta indica
CAS #	8002-65-1 ; 90063-92-6
EINECS #	290-052-2
INCI Name	Melia Azadirachta (Neem) Seed Oil

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

<u>PROPERTIES</u>	<u>SPECIFICATIONS</u>	<u>RESULTS</u>
Appearance	Golden yellow to reddish brown colored liquid	CONFORMS
Odour	Characteristic herbaceous, bitter odour	CONFORMS
Refractive Index	1.461 - 1.471 @ 40°C	1.465
Specific Gravity (g/mL)	0.910 - 0.950 @ 20°C	0.937
Saponification Value (mgKOH/g)	175 - 205	194
Peroxide Value (meqO <sub>2</sub> /kg)	Less than 20.0	CONFORMS
Iodine Value (g I <sub>2</sub> /100g)	65 - 80	71
Acid Value (mgKOH/g)	Less than 15.0	CONFORMS
Moisture and Insoluble Impurities (%)	Maximum 0.3	CONFORMS
Unsaponifiable Matter (%)	Maximum 2.0	CONFORMS
Azadirachtin Content (ppm)	Greater than 1000	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	9.00 – 16.00	15.70
Stearic Acid	C18:0	5.00 – 12.00	13.60
Oleic Acid	C18:1 (n-9)	12.00 – 22.00	54.40
Linoleic Acid	C18:2 (n-6)	52.00 – 70.00	13.60
Arachidic Acid	C20:0	Maximum 5.0	1.80

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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