

CERTIFICATE OF ANALYSIS (COA)

Product Name	BLACK CUMIN SEED (KALONJI) OIL
Botanical Name	Nigella sativa
CAS #	90064-32-7
EINECS #	290-094-1
INCI Name	Nigella sativa (Black Cumin) 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 amber colored liquid	CONFORMS
Odour	Characteristic mild peppery, bittery aroma	CONFORMS
Refractive Index	1.460 - 1.480 @ 20°C	1.471
Specific Gravity (g/mL)	0.910 - 0.935 @ 25°C	0.923
Saponification Value (mgKOH/g)	180 - 210	190
Peroxide Value (meq O <sub>2</sub> /kg)	Less than 5.0	CONFORMS
Iodine Value (g I <sub>2</sub> /100g)	110 - 130	115
Free Fatty Acids (% oleic)	Less than 10.0	CONFORMS
Acid Value (mgKOH/g)	Less than 20.0	CONFORMS
Solubility	Soluble in cosmetic esters and fixed oils; Insoluble in water	CONFORMS

**FATTY ACID COMPOSITION:**

<b>FATTY ACID</b>	<b>C-CHAIN</b>	<b>SPECIFICATIONS (%)</b>	<b>RESULTS</b>
Palmitic Acid	<u>C16:0</u>	<u>2.00 - 14.00</u>	<u>11.20</u>
Palmitoleic Acid	<u>C16:1</u>	<u>0.10 - 0.50</u>	<u>0.20</u>
Stearic Acid	<u>C18:0</u>	<u>2.00 - 4.00</u>	<u>2.30</u>
Oleic Acid	<u>C18:1 (n-9)</u>	<u>17.00 - 26.00</u>	<u>24.30</u>
Linoleic Acid	<u>C18:2 (n-6)</u>	<u>52.00 - 67.00</u>	<u>58.80</u>
Alpha-Linolenic Acid	<u>C18:3 (n-3)</u>	<u>Maximum 2.00</u>	<u>0.30</u>
Eicosadienoic Acid	<u>C20:2 (n-6)</u>	<u>Maximum 3.00</u>	<u>2.10</u>

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

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