

CERTIFICATE OF ANALYSIS (COA)

Product Name	BLACK SEED OIL
Botanical Name	Nigella sativa
Product Code	PCO4037
CAS #	90064-32-7
EINECS #	290-094-1
INCI Name	Nigella sativa (Black Cumin) Seed Oil

Batch #	40372111
Manufacturing Date	DECEMBER 2021
Best Before Date	NOVEMBER 2023

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

<u>PROPERTIES</u>	<u>SPECIFICATIONS</u>	<u>RESULTS</u>
Appearance	Pale yellow to amber colored liquid	CONFORMS
Odour	Characteristic mild peppery, bittery aroma	CONFORMS
Refractive Index	1.460 - 1.480 @ 20°C	1.470
Specific Gravity (g/mL)	0.910 - 0.935 @ 25°C	0.922
Saponification Value (mgKOH/g)	180 - 210	191
Peroxide Value (meq O₂/kg)	Less than 5.0	CONFORMS
Iodine Value (g I₂/100g)	110 - 130	116
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

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FATTY ACID COMPOSITION:

<u>FATTY ACID</u>	<u>C-CHAIN</u>	<u>SPECIFICATIONS (%)</u>	<u>RESULTS (%)</u>
Palmitic Acid	C16:0	10.00 – 15.00	11.60
Palmitoleic Acid	C16:1	0.10 – 0.50	0.20
Stearic Acid	C18:0	2.00 – 4.00	2.40
Oleic Acid	C18:1 (n-9)	17.00 – 26.00	23.60
Linoleic Acid	C18:2 (n-6)	52.00 – 67.00	57.40
Alpha-Linolenic Acid	C18:3 (n-3)	Maximum 1.00	0.20
Eicosadienoic Acid	C20:2 (n-6)	Maximum 3.00	2.10

<u>MICROBIAL ANALYSIS</u>	<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

STABILITY AND STORAGE:

Keep in tightly closed container in a cool and dry place, protected from sunlight. When stored for more than 24 months, quality should be checked before use.

As it is electronically generated document, hence no signature required.

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