

**CERTIFICATE OF ANALYSIS (COA)**

Product Name	MILK THISTLE SEED OIL
Botanical Name	Silybum marianum
CAS #	84604-20-6
EINECS #	283-298-7
INCI Name	Silybum Marianum Seed Oil

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

<u>PROPERTIES</u>	<u>SPECIFICATIONS</u>	<u>RESULTS</u>
Appearance	Clear light yellow to golden colored liquid	CONFORMS
Odour	Characteristic mild odour	CONFORMS
Refractive Index	1.471 - 1.475 @ 20°C	1.472
Specific Gravity (g/mL)	0.915 - 0.925 @ 25°C	0.921
Saponification Value (mgKOH/g)	170 - 200	181
Unsaponifiable Matter (%)	Maximum 1.50	
Peroxide Value (meq O <sub>2</sub> /kg)	Less than 10.0	CONFORMS
Iodine Value (g I <sub>2</sub> /100g)	90 - 120	103
Acid Value (mgKOH/g)	Less than 1.0	CONFORMS
Solubility	Soluble in cosmetic esters and fixed oils; Insoluble in water	CONFORMS

**FREE ACID COMPOSITION**

FATTY ACID	C-CHAIN	SPECIFICATIONS (%)	<u>RESULTS</u>
Palmitic Acid	C16:0	6.00 - 10.00	7.30
Stearic Acid	C18:0	3.00 - 7.00	4.20
Oleic Acid	C18:1 (n-9)	18.00 - 35.00	27.50
Linoleic Acid	C18:2 (n-6)	48.00 - 64.00	54.90
Arachidic Acid	C20:0	2.00 - 4.00	2.40
Alpha-Linolenic Acid	C18:3 (n-3)	Maximum 1.00	0.30
11-Eicosenoic Acid	C20:1 (n-9)	Maximum 1.50	0.60
Behenic Acid	C22:0	Maximum 3.00	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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