

## TECHNICAL DATA SHEET

***Efficacious Ingredients \* Hygienically Stored & Processed \* Convenient Deliveries***

Product Name: Borage Seed Oil

INCI: Borage officinalis (Borage) Seed Oil

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

Items	Specifications	Results
Appearance	Pale yellow to greenish yellow colored liquid	PASSED
Odour	Characteristic mild, pleasant odour	PASSED
Refractive Index	1.473 - 1.479 @ 20°C	1.475
Specific Gravity (g/mL)	0.910 - 0.935 @ 20°C	0.923
Saponification Value (mgKOH/g)	185 - 195	189
Peroxide Value (meq O <sub>2</sub> /kg)	Less than 8.0	PASSED
Iodine Value (g I <sub>2</sub> /100g)	125 - 160	146
Free Fatty Acids (% oleic)	Less than 2.0	PASSED
Acid Value (mgKOH/g)	Less than 4.0	PASSED
Solubility	Soluble in cosmetic esters and fixed oils; Insoluble in water	PASSED

### FATTY ACID COMPOSITION

Fatty Acid	C-Chain	Specifications (%)	Results (%)
Palmitic Acid	C16:0	8.00 – 13.00	9.10
Palmitoleic Acid	C16:1 (n-7)	Maximum 0.60	0.30
Stearic Acid	C18:0	2.00 – 6.00	3.20
Oleic Acid	C18:1 (n-9)	14.00 – 20.00	18.80
Linoleic Acid	C18:2 (n-6)	34.00 – 45.00	40.20
Alpha-Linolenic Acid	C18:3 (n-3)	Maximum 0.50	0.30
Gamma-Linolenic Acid	C18:3 (n-6)	20.00 – 25.00	20.10
11-Eicosenoic Acid	C20:1 (n-9)	3.00 – 5.00	3.80
Erucic Acid	C22:1 (n-9)	1.00 – 3.00	1.70
Nervonic Acid	C24:1 (n-9)	1.00 – 2.50	1.30

### MICROBIAL ANALYSIS

Test	Specifications	Standards	Results
Aerobic Mesophilic Bacterial Count	< 100 CFU/g	ISO 21149	PASSED
Yeast and Mould	< 10 CFU/g	ISO 16212	PASSED
Candida albicans	ABSENT / 1g	ISO 18416	PASSED

Escherichia coli	ABSENT / 1g	ISO 21150	PASSED
Pseudomonas aeruginosa	ABSENT / 1g	ISO 22717	PASSED
Staphylococcus aureus	ABSENT / 1g	ISO 22718	PASSED

## HEAVY METAL TESTS

Test	Specifications	Standards	Results
Lead: Pb (mg/kg or ppm)	< 10 ppm	NA	PASSED
Arsenic: As (mg/kg or ppm)	< 2 ppm	NA	PASSED
Mercury: Hg (mg/kg or ppm)	< 1 ppm	NA	PASSED

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