

CERTIFICATE OF ANALYSIS (COA)

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|----------------|---|
| Product Name | BROCCOLI SEED OIL |
| Botanical Name | Brassica oleracea var. italica |
| CAS # | 223749-36-8 |
| EINECS # | - |
| INCI Name | Brassica Oleracea Italica (Broccoli) 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 golden yellow colored liquid | CONFORMS |
| Odour | Slightly herbaceous, characteristic mild odour | CONFORMS |
| Refractive Index | 1.465 - 1.475 @ 20°C | 1.470 |
| Specific Gravity (g/mL) | 0.910 - 0.920 @ 20°C | 0.915 |
| Saponification Value (mgKOH/g) | 168 - 190 | 178 |
| Peroxide Value (meq O ₂ /kg) | Less than 5.0 | CONFORMS |
| Iodine Value (g I ₂ /100g) | 90 - 120 | 97 |
| Acid Value (mgKOH/g) | Less than 3.0 | CONFORMS |
| Solubility | Soluble in cosmetic esters and fixed oils; Insoluble in water | CONFORMS |

FATTY ACID COMPOSITION:

| FATTY ACID | C-CHAIN | SPECIFICATIONS (%) | RESULTS |
|----------------------|--------------------|---------------------------|----------------|
| Palmitic Acid | <u>C16:0</u> | <u>1.00 – 5.00</u> | <u>2.30</u> |
| Stearic Acid | <u>C18:0</u> | <u>Maximum 2.00</u> | <u>0.90</u> |
| Oleic Acid | <u>C18:1 (n-9)</u> | <u>5.00 – 18.00</u> | <u>17.10</u> |
| Linoleic Acid | <u>C18:2 (n-6)</u> | <u>5.00 – 15.00</u> | <u>14.10</u> |
| Alpha-Linolenic Acid | <u>C18:3 (n-3)</u> | <u>6.00 – 12.00</u> | <u>10.90</u> |
| 11-Eicosenoic Acid | <u>C20:1 (n-9)</u> | <u>2.00 – 10.00</u> | <u>6.30</u> |
| Erucic Acid | <u>C22:1 (n-9)</u> | <u>42.00 – 60.00</u> | <u>46.90</u> |

| 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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