

### TECHNICAL DATA SHEET (TDS)

|                |                                  |
|----------------|----------------------------------|
| Product Name   | COCOA BEAN OIL                   |
| Botanical Name | Theobroma cacao                  |
| CAS #          | 8002-31-1                        |
| EINECS #       | -                                |
| INCI Name      | Theobroma Cacao (Cocoa) Seed Oil |

|                   |                       |
|-------------------|-----------------------|
| Part Used         | Beans                 |
| Extraction Method | Cold Pressed          |
| Quality           | 100% Pure and Natural |

| <b><u>PROPERTIES</u></b>                | <b><u>SPECIFICATIONS</u></b>                                     |
|---|--|
| Appearance                              | Pale yellow to golden colored liquid                             |
| Odour                                   | Characteristic faint odour                                       |
| Refractive Index                        | 1.450 - 1.490 @ 20°C   |
| Specific Gravity (g/mL)                 | 0.890 - 0.930 @ 20°C   |
| Saponification Value (mgKOH/g)          | 170 – 200  |
| Peroxide Value (meq O <sub>2</sub> /kg) | Less than 4.0  |
| Iodine Value (g I <sub>2</sub> /100g)   | 30 - 85  |
| Free Fatty Acids (% oleic)              | Less than 1.5  |
| Moisture (%)                            | Less than 0.1%   |
| Solubility                              | Soluble in cosmetic esters and fixed oils;<br>Insoluble in water |

#### **FATTY ACID COMPOSITION:**

| <b><u>FATTY ACID</u></b> | <b><u>C-CHAIN</u></b> | <b><u>SPECIFICATIONS (%)</u></b> |
|--------------------------|-----------------------|----------------------------------|
| Palmitic Acid            | <u>C16:0</u>          | <u>5.00 – 12.00</u>              |
| Stearic Acid             | <u>C18:0</u>          | <u>6.00 – 16.00</u>              |
| Oleic Acid               | <u>C18:1 (n-9)</u>    | <u>66.00 – 78.00</u>             |
| Linoleic Acid            | <u>C18:2 (n-6)</u>    | <u>5.00 – 14.00</u>              |

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| <b>MICROBIAL ANALYSIS</b>          | <b><u>SPECIFICATIONS</u></b> | <b><u>STANDARDS</u></b> |
|------------------------------------|------------------------------|-------------------------|
| Aerobic Mesophilic Bacterial Count | < 100 CFU/g                  | ISO 21149               |
| Yeast and Mould                    | < 10 CFU/g                   | ISO 16212               |
| Candida albicans                   | ABSENT / 1g                  | ISO 18416               |
| Escherichia coli                   | ABSENT / 1g                  | ISO 21150               |
| Pseudomonas aeruginosa             | ABSENT / 1g                  | ISO 22717               |
| Staphylococcus aureus              | ABSENT / 1g                  | ISO 22718               |

| <b><u>HEAVY METAL TESTS</u></b> | <b><u>SPECIFICATIONS</u></b> | <b><u>STANDARDS</u></b> |
|---------------------------------|------------------------------|-------------------------|
| Lead: Pb (mg/kg or ppm)         | < 10 ppm                     | na                      |
| Arsenic: As (mg/kg or ppm)      | < 2 ppm                      | na                      |
| Mercury: Hg (mg/kg or ppm)      | < 1 ppm                      | na                      |

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