

**TECHNICAL DATA SHEET (TDS)**

|                       |                                   |
|-----------------------|-----------------------------------|
| <b>Product Name</b>   | <b>BLACK SPRUCE ESSENTIAL OIL</b> |
| <b>Botanical Name</b> | Picea mariana                     |
| <b>CAS #</b>          | 8008-80-8 ; 91722-19-9            |
| <b>EINECS #</b>       | 3034                              |
| <b>INCI Name</b>      | Picea Mariana (Black Spruce) Oil  |

|                            |                               |
|----------------------------|-------------------------------|
| <b>Part Used</b>           | Needles                       |
| <b>Extraction Method</b>   | Steam Distilled Essential Oil |
| <b>Quality</b>             | 100% Pure and Natural         |
| <b>Note Classification</b> | Top to Middle                 |

| <b><u>PROPERTIES</u></b>       | <b><u>SPECIFICATIONS</u></b>   |
|--------------------------------|--|
| <b>Appearance</b>              | Colorless to pale yellow liquid  |
| <b>Odour</b>                   | Fresh, penetrating, pine forest-like aroma with balsamic, woody undertones |
| <b>Refractive Index</b>        | 1.466 - 1.472 @ 20°C   |
| <b>Specific Gravity (g/mL)</b> | 0.900 - 0.930 @ 20°C   |
| <b>Optical Rotation (°)</b>    | -20° to +4°  |
| <b>Solubility</b>              | Soluble in alcohols and fixed oils; Insoluble                              |

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

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

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