**TECHNICAL DATA SHEET (TDS)**

<table>
<thead>
<tr>
<th><strong>Product Name</strong></th>
<th>BLACK SPRUCE OIL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Botanical Name</strong></td>
<td>Picea mariana</td>
</tr>
<tr>
<td><strong>Product Code</strong></td>
<td>PEO1021</td>
</tr>
<tr>
<td><strong>CAS #</strong></td>
<td>8008-80-8 ; 91722-19-9</td>
</tr>
<tr>
<td><strong>FEMA #</strong></td>
<td>3034</td>
</tr>
<tr>
<td><strong>EINECS #</strong></td>
<td>294-420-3</td>
</tr>
<tr>
<td><strong>INCI Name</strong></td>
<td>Picea Mariana (Black Spruce) Oil</td>
</tr>
</tbody>
</table>

**Part Used:** Needles  
**Extraction Method:** Steam Distilled Essential Oil  
**Quality:** 100% Pure and Natural  
**Note Classification:** Top to Middle Note

### PROPERTIES

<table>
<thead>
<tr>
<th><strong>Appearance</strong></th>
<th>Colorless to pale yellow liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Odour</strong></td>
<td>Fresh, penetrating, pine forest-like aroma with balsamic, woody undertones</td>
</tr>
<tr>
<td><strong>Refractive Index</strong></td>
<td>1.466 - 1.472 @ 20°C</td>
</tr>
<tr>
<td><strong>Specific Gravity (g/mL)</strong></td>
<td>0.900 - 0.930 @ 20°C</td>
</tr>
<tr>
<td><strong>Optical Rotation (°)</strong></td>
<td>-41° to -25°</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>Soluble in alcohols and fixed oils; Insoluble in water</td>
</tr>
</tbody>
</table>

### MICROBIAL ANALYSIS

<table>
<thead>
<tr>
<th><strong>SPECIFICATIONS</strong></th>
<th><strong>STANDARDS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aerobic Mesophilic Bacterial Count</strong></td>
<td>&lt; 100 CFU/g</td>
</tr>
<tr>
<td><strong>Yeast and Mould</strong></td>
<td>&lt; 10 CFU/g</td>
</tr>
<tr>
<td><strong>Candida albicans</strong></td>
<td>ABSENT / 1g</td>
</tr>
<tr>
<td><strong>Escherichia coli</strong></td>
<td>ABSENT / 1g</td>
</tr>
<tr>
<td><strong>Pseudomonas aeruginosa</strong></td>
<td>ABSENT / 1g</td>
</tr>
<tr>
<td><strong>Staphylococcus aureus</strong></td>
<td>ABSENT / 1g</td>
</tr>
</tbody>
</table>

### HEAVY METAL TESTS

<table>
<thead>
<tr>
<th><strong>SPECIFICATIONS</strong></th>
<th><strong>STANDARDS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead: Pb (mg/kg or ppm)</strong></td>
<td>&lt; 10 ppm</td>
</tr>
<tr>
<td><strong>Arsenic: As (mg/kg or ppm)</strong></td>
<td>&lt; 2 ppm</td>
</tr>
<tr>
<td><strong>Mercury: Hg (mg/kg or ppm)</strong></td>
<td>&lt; 1 ppm</td>
</tr>
</tbody>
</table>

Disclaimer: Please refer to all relevant technical information specific to the product, prior to use. The information contained in this document is obtained from current and reliable sources. Paras Perfumers provides the information contained herein, but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgement in determining its appropriateness for a particular purpose.
STABILITY AND STORAGE:
Keep in tightly closed container in a cool and dry place, protected from sunlight. When stored for more than 24 months, quality should be checked before use.

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