

**CERTIFICATE OF ANALYSIS (COA)**

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

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

<u>PROPERTIES</u>	<u>SPECIFICATIONS</u>	<u>Result</u>
Appearance	Colorless to pale yellow liquid	CONFORMS
Odour	Fresh, penetrating, pine forest-like aroma with balsamic, woody undertones	CONFORMS
Refractive Index	1.466 - 1.472 @ 20°C	1.468
Specific Gravity (g/mL)	0.900 - 0.930 @ 20°C	0.920
Optical Rotation (°)	-41° to -25°	CONFORMS
Solubility	Soluble in alcohols and fixed oils; Insoluble	CONFORMS

<u>MICROBIAL ANALYSIS</u>	<u>SPECIFICATIONS</u>	<u>STANDARDS</u>	<u>Result</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>Result</u>
Lead: Pb (mg/kg or ppm)	< 10 ppm	n	CONFORMS
Arsenic: As (mg/kg or ppm)	< 2	n	CONFORMS
Mercury: Hg (mg/kg or ppm)	< 1	n	CONFORMS

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A-004, New Highway Park E-3 CHSL, Kandivali (E), Mumbai 400 101.

Tel: +91 2870 1974 | 750689 1975 | Email: essentialoilsofindia@gmail.com | www.essentialoilsofindia.com