

CERTIFICATE OF ANALYSIS (COA)

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|----------------|--------------------------|
| Product Name | BETEL LEAF ESSENTIAL OIL |
| Botanical Name | Piper betle |
| CAS # | 84775-81-5 |
| EINECS # | 283-910-2 |
| INCI Name | Piper Betle Leaf Oil |

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

| <u>PROPERTIES</u> | <u>SPECIFICATIONS</u> | <u>RESULTS</u> |
|-------------------------|--|----------------|
| Appearance | Pale yellow to brownish colored liquid | CONFORMS |
| Odour | Phenolic, smoky-spicy odour | CONFORMS |
| Refractive Index | 1.490 to 1.530 nD | 1.514 |
| Specific Gravity (g/mL) | 0.9300 to 1.0200 g/cm ³ | 0.972 |
| Optical Rotation (°) | -12° to +7° | CONFORMS |
| Solubility | Soluble in alcohols and fixed oils; Insoluble in water | CONFORMS |

| <u>MICROBIAL ANALYSIS</u> | <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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