



## CERTIFICATE OF ANALYSIS

<b>Type</b>	Essential Oil
<b>Latin Name</b>	Mentha X Piperita (organic)
<b>Country of Origin</b>	India
<b>Extraction Method</b>	Steam Distilled
<b>Plant Part</b>	Flowering tops
<b>Typical Use</b>	Aromatherapy
<b>SKU</b>	OB.SN.PEP.21.01
<b>Analysis Method</b>	GC-MS
<b>Manufacture Date</b>	May 2019
<b>Test Date</b>	May 20, 2020
<b>Retailer</b>	Okapi Bay
<b>Physical Properties</b>	Liquid
<b>Refractive Index @ 20 °C</b>	1.4603 ± 0.0003
<b>Specific Gravity @ 20 °C</b>	0.904
<b>Color</b>	Transparent to pale yellow
<b>Odor</b>	Typical characteristics – minty fresh

### Conclusion:

No adulterant or diluent has been detected using this method. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise.

GC CONSOLIDATED RESULTS

Component	%	CLASS
Ethanol	tr	Aliphatic alcohol
Isobutyral	tr	Aliphatic aldehyde
Isobutanol	tr	Aliphatic alcohol
Isovaleral	0.02	Aliphatic aldehyde
2-Methylbutyral	0.01	Aliphatic aldehyde
2-Ethylfuran	0.01	Furan
Isoamyl alcohol	0.03	Aliphatic alcohol
2-Methylbutanol	0.02	Aliphatic alcohol
Ethyl 2-methylbutyrate	tr	Aliphatic ester
(3Z)-Hexenol	0.01	Aliphatic alcohol
Hexanol	0.01	Aliphatic alcohol
trans-2,5-Diethyltetrahydrofuran	0.04	Furan
Heptanal	0.01	Aliphatic aldehyde
Hashishene	0.01	Monoterpene
α-Thujene	0.06	Monoterpene
α-Pinene	0.82	Monoterpene
Unknown	0.01	Monoterpene
trans-3-Methylcyclohexanol	0.02	Aliphatic alcohol
Camphene	0.02	Monoterpene
3-Methylcyclohexanone	0.28	Aliphatic ketone
Thuja-2,4(10)-diene	0.01	Monoterpene
cis-para-Menthane	0.02	Monoterpene
β-Pinene	1.39	Monoterpene
Sabinene	0.61	Monoterpene
Octen-3-ol	0.09	Aliphatic alcohol
Octan-3-one	0.03	Aliphatic ketone
trans-para-Menthane	tr	Monoterpene
cis-Carane	0.01	Monoterpene
Myrcene	0.36	Monoterpene
Octan-3-ol	0.18	Aliphatic alcohol
Octanal	0.01	Aliphatic aldehyde
α-Phellandrene	0.07	Monoterpene
Pseudolimonene	0.03	Monoterpene
Δ3-Carene	0.01	Monoterpene
α-Terpinene	0.28	Monoterpene
Carvomenthene	0.01	Aliphatic alcohol
para-Cymene	0.25	Monoterpene
Limonene	1.98	Monoterpene
1,8-Cineole	5.16	Monoterpenic ether
(Z)-β-Ocimene	0.20	Monoterpene
(E)-β-Ocimene	0.06	Monoterpene
γ-Terpinene	0.52	Monoterpene
cis-Sabinene hydrate	0.36	Monoterpenic alcohol
para-Mentha-3,8-diene	0.01	Monoterpene
cis-Linalool oxide (fur.)	0.02	Monoterpenic alcohol
Octanol	0.01	Aliphatic alcohol

<b>para-Cymenene</b>	0.02	Monoterpene
<b>Terpinolene</b>	0.17	Monoterpene
<b>trans-Sabinene hydrate</b>	0.04	Monoterpenic alcohol
<b>Linalool</b>	0.21	Monoterpenic alcohol
<b>2-Methylbutyl 2-methylbutyrate</b>	0.07	Aliphatic ester
<b>Amyl isovalerate</b>	0.06	Aliphatic ester
<b>Octen-3-yl acetate</b>	0.01	Aliphatic ester
<b>cis-para-Menth-2-en-1-ol</b>	0.07	Monoterpenic alcohol
<b>Octan-3-yl acetate</b>	0.02	Aliphatic ester
<b>allo-Ocimene</b>	tr	Monoterpene
<b>trans-Sabinol</b>	0.07	Monoterpenic alcohol
<b>Isopulegol</b>	0.13	Monoterpenic alcohol
<b>Menthone</b>	19.95	Monoterpenic ketone
<b>Isomenthone</b>	3.65	Monoterpenic ketone
<b>Menthofuran</b>	2.06	Monoterpenic ether
<b>neo-Menthol</b>	4.19	Monoterpenic alcohol
<b>δ-Terpineol</b>	0.13	Monoterpenic alcohol
<b>Lavandulol</b>	0.06	Monoterpenic alcohol
<b>Terpinen-4-ol</b>	1.32	Monoterpenic alcohol
<b>Menthol</b>	35.19	Monoterpenic alcohol
<b>Isomenthol</b>	0.71	Monoterpenic alcohol
<b>para-Cymen-8-ol</b>	0.04	Monoterpenic alcohol
<b>α-Terpineol</b>	0.24	Monoterpenic alcohol
<b>neoiso-Menthol</b>	0.27	Monoterpenic alcohol
<b>Myrtenal</b>	0.02	Monoterpenic aldehyde
<b>Methylchavicol</b>	0.03	Phenylpropanoid
<b>Myrtenol</b>	0.01	Monoterpenic alcohol
<b>trans-Isopiperitenol</b>	0.01	Monoterpenic alcohol
<b>Unknown</b>	0.01	Unknown
<b>trans-Piperitol</b>	0.01	Monoterpenic alcohol
<b>Decanal</b>	0.02	Aliphatic aldehyde
<b>trans-Carveol</b>	0.01	Monoterpenic alcohol
<b>cis-Carveol</b>	0.02	Monoterpenic alcohol
<b>Pulegone</b>	0.69	Monoterpenic ketone
<b>Citronellol</b>	0.02	Monoterpenic alcohol
<b>Carvone</b>	0.14	Monoterpenic ketone
<b>Unknown</b>	0.01	Unknown
<b>Unknown</b>	0.01	Unknown
<b>Piperitone</b>	0.54	Monoterpenic ketone
<b>cis-Carvone oxide</b>	0.01	Monoterpenic ketone
<b>neo-Menthyl acetate</b>	0.66	Monoterpenic ester
<b>Decanol</b>	0.01	Aliphatic alcohol
<b>Dihydroedulan I</b>	0.11	Terpenic ether
<b>Menthyl acetate</b>	8.34	Monoterpenic ester
<b>Dihydroedulan II</b>	0.08	Terpenic ether
<b>Thymol</b>	0.05	Monoterpenic alcohol
<b>Isomenthyl acetate</b>	0.43	Monoterpenic alcohol
<b>Bicycloelemene</b>	0.01	Sesquiterpene
<b>trans-Carvyl acetate</b>	0.01	Monoterpenic ester
<b>Piperitenone</b>	0.01	Monoterpenic ketone

<b><math>\alpha</math>-Cubebene</b>	0.02	Sesquiterpene
<b>Unknown</b>	0.02	Unknown
<b>Eugenol</b>	0.06	Phenylpropanoid
<b><math>\alpha</math>-Ylangene</b>	0.01	Sesquiterpene
<b><math>\alpha</math>-Copaene</b>	0.05	Sesquiterpene
<b><math>\beta</math>-Bourbonene</b>	0.19	Sesquiterpene
<b>1,5-diepi-<math>\beta</math>-Bourbonene</b>	0.02	Sesquiterpene
<b><math>\beta</math>-Cubebene</b>	0.03	Sesquiterpene
<b><math>\beta</math>-Elemene</b>	0.09	Sesquiterpene
<b>Unknown</b>	0.03	Unknown
<b>(Z)-Jasmone</b>	0.03	Jasmonate
<b>Unknown</b>	0.05	Sesquiterpene
<b>Isocaryophyllene</b>	0.02	Sesquiterpene
<b><math>\beta</math>-Ylangene</b>	0.09	Sesquiterpene
<b><math>\beta</math>-Caryophyllene</b>	2.22	Sesquiterpene
<b><math>\beta</math>-Copaene</b>	0.04	Sesquiterpene
<b><i>trans</i>-<math>\alpha</math>-Bergamotene</b>	0.02	Sesquiterpene
<b>Isogermacrene D</b>	0.02	Sesquiterpene
<b><math>\alpha</math>-Humulene</b>	0.12	Sesquiterpene
<b>Muurolo-4,11-diene</b>	0.04	Sesquiterpene
<b>(E)-<math>\beta</math>-Farnesene</b>	0.29	Sesquiterpene
<b>Germacrene D</b>	1.46	Sesquiterpene
<b>Menthallactone</b>	0.04	Monoterpenic lactone
<b>Viridiflorene</b>	0.03	Sesquiterpene
<b>Bicyclogermacrene</b>	0.22	Sesquiterpene
<b>5-Methyl-2,4-diisopropylphenol</b>	0.01	Terpene derivative
<b><math>\alpha</math>-Muurolole</b>	0.02	Sesquiterpene
<b><math>\gamma</math>-Cadinene</b>	0.02	Sesquiterpene
<b><math>\delta</math>-Cadinene</b>	0.07	Sesquiterpene
<b><math>\alpha</math>-Cadinene</b>	0.01	Sesquiterpene
<b>(E)-<math>\alpha</math>-Bisabolene</b>	0.01	Sesquiterpene
<b>Spathulenol</b>	0.02	Sesquiterpenic alcohol
<b>Caryophyllene oxide isomer</b>	0.02	Sesquiterpenic ether
<b>Caryophyllene oxide</b>	0.05	Sesquiterpenic ether
<b>Viridiflorol</b>	0.16	Sesquiterpenic alcohol
<b>Isospathulenol</b>	0.02	Sesquiterpenic alcohol
<b><math>\tau</math>-Cadinol</b>	0.02	Sesquiterpenic alcohol
<b><math>\alpha</math>-Eudesmol</b>	0.02	Sesquiterpenic alcohol
<b><math>\alpha</math>-Cadinol</b>	0.03	Sesquiterpenic alcohol
<b>Unknown</b>	0.02	Unknown
<b>meta-Camphorene</b>	0.01	Diterpene
<b>Total</b>	<b>98.78%</b>	

MS RESULTS SUMMARY



