

**Date:** September 09<sup>th</sup>, 2020

**CERTIFICATE OF ANALYSIS - GC PROFILING**

**Sample identification:** Peppermint - 200687536

**Type:** Essential oil

**Source:** Mentha x piperita

**ANALYSIS**

Method: 10152018\_10:1split.m - Analysis of the composition of an essential oil, or other volatile liquid, by GC-FID, identifications validated by GC-MS.

**Analysis date:** September 08<sup>th</sup>, 2020.

**Physical aspect:** Faintly yellow liquid

**CONCLUSION**

No adulterant, contaminant or diluent has been detected using this method. The oil nearly complies with ISO specifications.

**Analyzed and approved by:**

Dr. Hussam Bdour  
Chief Quality Control Chemist  
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Peak	Compound	RT	Area Sum %
1	cis-2-Hexenol	7.602	0.04
2	$\alpha$ -Thujene	8.966	0.03
3	$\alpha$ -Pinene	9.232	0.91
4	cis-3-Methylcyclohexanol	9.759	0.07
5	Camphene analog	9.961	0.02
6	3-Methylcyclohexanone	10.091	0.13
7	Sabinene + $\beta$ -Pinene	11.537	1.73
8	1-Octen-3-ol	12.096	0.05
9	1-Octen-3-ol	12.528	0.03
10	$\beta$ -Myrcene	12.739	0.3
11	3-Octanol	13.097	0.29
12	$\alpha$ -Phellandrene	13.32	0.04
13	$\alpha$ -Terpinene	14.192	0.2
14	p-Cymene	14.752	0.12
15	Limonene	15.037	2.13
16	1,8-Cineole	15.162	5.84
17	(Z)- $\beta$ -Ocimene	15.984	0.1
18	(E)- $\beta$ -Ocimene	16.693	0.03
19	$\gamma$ -Terpinene	17.236	0.35
20	cis-Sabinene hydrate	17.81	0.23
21	Octanol	18.627	0.03
22	$\alpha$ -Terpinolene	19.42	0.06
23	trans-Sabinene hydrate	20.211	0.03
24	Linalool	20.657	0.1
25	Amyl isovalerate	21.066	0.03
26	unknown	22.012	0.03
27	Isopulegol	23.896	0.14
28	Menthone	24.816	21.96
29	Menthofuran + Isomenthone	25.462	5.18
30	Neo-Menthol	25.642	3.78
31	Menthol	26.857	45.98
32	Isomenthol	27.169	0.28
33	Neoisomenthol	27.702	0.05
34	$\alpha$ -Terpineol	27.788	0.24
35	Pulegone	31.596	0.68
36	Carvone	32.038	0.08
37	Piperitenone	32.802	0.25
38	neo-Menthyl acetate	34.917	0.1
39	Dihydroedulan I	35.475	0.06
40	Dihydroedulan II	35.898	0.02
41	Menthyl acetate	36.612	5.36

42	Isomenthyl acetate	37.475	0.06
43	Bicycloelemenene	39.618	0.04
44	$\alpha$ -Copaene	42.569	0.06
45	$\beta$ -Bourbonene	43.191	0.09
46	$\beta$ -Elemene	44.072	0.05
47	$\beta$ -Caryophyllene	45.847	1.63
48	$\beta$ -Copaene	46.678	0.06
49	$\alpha$ -Humulene	48.484	0.07
50	(E)- $\beta$ -Farnesene	49.718	0.11
51	Germacrene D	50.703	0.54
52	Bicyclogermacrene	51.908	0.08
53	$\delta$ -Cadinene	54.246	0.04
54	Caryophyllene oxide	58.142	0.02
55	Viridiflorol	58.821	0.06
	<b>Total identified</b>		<b>99.97%</b>



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