



**Date:** May 7, 2020

**CERTIFICATE OF ANALYSIS - GC PROFILING**

**Sample identification:** Organic Bergamot - 200341986

**Type:** Essential oil

**Source:** Citrus aurantium var. bergamia

**Country of Origin:** Italy

**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:** May 6, 2020

Physical aspect: Clear liquid

**CONCLUSION**

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

complies with ISO		
Compound	Area Sum %	ISO
Sabinene + $\beta$ -Pinene	7.27	5.5-9.5 $\beta$ -pinene
Limonene	43.06	30-45
$\gamma$ -Terpinene	6.21	6-10.0
Linalool	11.47	3-15.0
Linalyl acetate	25.64	22-36
Geranial	0.29	0.25-0.50
$\beta$ -Bisabolene	0.35	0.3-0.55

Peak	Compound	RT	Area Sum %
1	Tricyclene	8.719	0.01
2	$\alpha$ -Thujene	9.05	0.26
3	$\alpha$ -Pinene	9.323	1.01
4	Camphene	10.053	0.03
5	Sabinene + $\beta$ -Pinene	11.677	7.27
6	$\beta$ -Myrcene	12.852	1.15
7	$\alpha$ -Phellandrene	13.468	0.02
8	Octanal	13.661	0.03
9	$\alpha$ -Terpinene	14.317	0.14
10	p-Cymene	14.91	0.25
11	Limonene	15.386	43.06
12	(Z)- $\beta$ -Ocimene	16.12	0.05
13	(E)- $\beta$ -Ocimene	16.82	0.23
14	$\gamma$ -Terpinene	17.427	6.21
15	cis-Sabinene hydrate	17.945	0.03
16	cis-p-Mentha-2,8-dien-1-ol	18.714	0.01
17	cis-p-Mentha-2,8-dien-1-ol	19.537	0.29
18	$\alpha$ -Terpinolene	20.326	0.01
19	Linalool	20.952	11.47
20	Nonanal	21.187	0.02
21	trans-2,8-p-Mentha-dien-1-ol	22.101	0.01
22	Terpinen-4-ol	26.557	0.03
23	$\alpha$ -Terpineol	27.739	0.13
24	Decanal	29.455	0.04
25	Octyl acetate	30.226	0.07
26	Nerol	31.222	0.05
27	Neral	32.197	0.21
28	unknown	33.182	0.04
29	Linalyl acetate	34.051	25.64
30	Geranial	34.792	0.29
31	Bornyl acetate	35.743	0.02
32	Nonanyl acetate	38.494	0.02
33	$\delta$ -Elemene	39.835	0.02
34	unknown	40.426	0.03
35	$\alpha$ -Terpinyl acetate	41.028	0.11
36	unknown	41.847	0.02
37	Neryl acetate	42.706	0.33
38	Geranyl acetate	44.296	0.32
39	cis- $\alpha$ -Bergamotene	45.952	0.32
40	trans- $\alpha$ -Bergamotene	47.751	0.26
41	$\alpha$ -Humulene	48.596	0.03
42	(E)- $\beta$ -Farnesene	49.853	0.05
43	Germacrene D	50.835	0.04

44	$\beta$ -Bisabolene	53.529	0.35
45	unknown	70.603	0.02
46	unknown	72.696	0.01
<b>Total identified</b>			<b>99.88%</b>

