

Date: December 26, 2019

CERTIFICATE OF ANALYSIS - GC PROFILING

Sample identification: Organic Helichrysum Italicum - 191284637

Type: Essential oil

Source: Helichrysum Italicum

Country of origin: Eastern Europe

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: December 26, 2019

Physical aspect: Yellow liquid

CONCLUSION

No adulterant, contaminant or diluent has been detected using this method.

Analyzed and approved by:

Dr. Hussam Bdour
Chief Quality Control Chemist
IL Health & Beauty Natural Oils Co., Inc.

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Peak	Compound	RT	Area Sum %
1	4-Methyl-3-hexanone	5.605	0.15
2	Bornylene	8.006	0.05
3	α -Thujene	9.136	0.03
4	α -Pinene	9.53	27.01
5	Camphene	10.059	0.55
6	β -Pinene	11.71	0.61
7	β -Myrcene	12.919	0.09
8	unknown	13.302	0.04
9	α -Phellandrene	13.537	0.04
10	Isobutyl 2-methylbutyrate	13.777	0.06
11	α -Terpinene	14.372	0.25
12	p-Cymene	14.933	0.21
13	Limonene	15.226	3.55
14	1,8-Cineole	15.309	0.31
15	(Z)- β -Ocimene	16.166	0.03
16	(E)- β -Ocimene	16.874	0.05
17	Isobutyl angelate	17.237	0.32
18	γ -Terpinene	17.425	0.51
19	α -Terpinolene	19.606	0.22
20	Linalool	20.812	0.75
21	2-Methylbutyl 2-methylbutyrate	21.243	0.13
22	endo-Fenchol	21.44	0.05
23	trans-Pinocarveol	23.333	0.06
24	Isoamyl angelate	25.276	0.92
25	Borneol	25.595	0.08
26	Terpinen-4-ol	26.613	0.3
27	α -Terpineol	27.803	0.53
28	Dimethyl octanedione isomer	27.879	0.18
29	2-methylbutyl tiglate	28.788	0.03
30	Nerol	31.248	0.4
31	4,6-Dimethyloctane-3,5-dione	31.528	0.07
32	unknown	33.584	0.04
33	unknown	33.809	0.06
34	3-Methylamyl angelate	34.234	0.04
35	Hexyl angelate	36.357	0.41
36	Cyclosativene II	41.882	0.3
37	α -Ylangene	42.433	0.19
38	α -Copaene + Neryl acetate	42.932	7.94
39	unknown	44.227	0.2
40	Isoitalicene	44.436	0.19
41	Italicene	44.928	3.49
42	unknown	45.18	0.07

43	β -Caryophyllene	46.167	6.16
44	trans- α -Bergamotene	47.856	1.01
45	unknown	48.21	0.17
46	Italdione	48.636	2.78
47	α -Humulene	48.692	0.31
48	Aromandendrene	49.257	0.08
49	α -Acoradiene	49.632	0.35
50	β -Acoradiene	49.992	1.27
51	γ -Selinene	50.704	1.74
52	β -Selinene	51.413	9.27
53	γ -Curcumene	51.64	11.14
54	Ar-Curcumene	51.798	2.36
55	unknown	51.933	1.36
56	α -Selinene	52.193	4.13
57	unknown	52.326	1.18
58	α -Muurolene	52.767	0.39
59	unknown	53.234	0.25
60	γ -Cadinene	53.643	0.54
61	β -Curcumene	53.904	0.5
62	Italidione II isomer	54.112	0.3
63	δ -Cadinene	54.523	0.76
64	Italicene ether	55.008	0.21
65	(E)- γ -Bisabolene	55.289	0.1
66	α -Cadinene	55.374	0.06
67	α -Calacorene	55.705	0.07
68	Phenylethyl tiglate	55.87	0.07
69	(E)- α -Bisabolene	56.253	0.18
70	Caryophyllene oxide	58.372	0.13
71	Italidione III isomer	58.699	0.31
72	Italidione III isomer II	59.126	0.35
73	unknown	59.621	0.15
74	unknown	60	0.21
75	Rosifoliol analog	60.287	0.21
76	Selin-11-en-4 α -ol analog	60.722	0.11
77	unknown	61.711	0.12
78	1,10-Diepicubenol	61.98	0.06
79	unknown	62.122	0.09
80	unknown	62.382	0.06
81	τ -Cadinol	62.471	0.06
82	β -Eudesmol	62.68	0.06
83	Selin-11-en-4 α -ol	62.859	0.19
84	unknown	63.551	0.11
85	unknown	64.966	0.09

86	unknown	65.442	0.08
87	unknown	65.693	0.24
88	unknown	66.064	0.05
89	unknown	71.165	0.07
90	unknown	72.003	0.02
	Total identified		95.34%

