

Date: August 12th, 2020

CERTIFICATE OF ANALYSIS - GC PROFILING

Sample identification: Cardamom – 200795017

Type: Essential oil

Source: Elettaria cardamomum

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: August 11th, 2020

Physical aspect: Clear liquid

CONCLUSION

No adulterant, contaminant or diluent has been detected using this method. This oil nearly complies with ISO standard for Cardamom oil.

Analyzed and approved by:

Dr. Hussam Bdour
Chief Quality Control Chemist
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Peak	Compound	RT	Area Sum %
1	α -Thujene	8.997	0.31
2	α -Pinene	9.271	1.53
3	Camphene	9.995	0.05
4	Sabinene	11.521	4.37
5	β -Pinene	11.585	1.34
6	6-Methyl-5-heptene-2-one	12.627	0.01
7	β -Myrcene	12.777	0.67
8	α -Phellandrene	13.39	0.23
9	Octanal	13.593	0.02
10	δ 3-carene	13.752	0.03
11	α -Terpinene	14.235	0.12
12	p-Cymene	14.817	0.3
13	Limonene + 1,8-Cineole	15.356	34.53
14	(Z)- β -Ocimene	16.029	0.03
15	(E)- β -Ocimene	16.733	0.02
16	γ -Terpinene	17.271	0.19
17	cis-Sabinene hydrate	17.879	0.01
18	cis-Linalool oxide	18.599	0.03
19	α -Terpinolene	19.449	0.14
20	trans-Sabinene hydrate	20.235	0.01
21	Linalool	20.75	4.73
22	cis-para-Menth-2-en-1-ol	22.021	0.02
23	δ -Terpineol	25.752	0.01
24	Terpinen-4-ol	26.455	1
25	α -Terpineol	27.698	2.21
26	γ -Terpineol	28.344	0.11
27	Decanal	29.357	0.03
28	unknown	30.154	0.02
29	unknown	32.092	0.09
30	Geraniol	33.604	0.8
31	Linalyl acetate	33.717	4.64
32	Geranial	34.665	0.1
33	Bornyl acetate	35.602	0.04
34	unknown	36.922	0.03
35	δ -Terpinyl acetate	38.301	0.08
36	β -Terpinyl acetate	39.612	0.5
37	α -Terpinyl acetate	41.365	39.51
38	Geranyl acetate	44.202	0.6
39	β -Caryophyllene	45.857	0.04
40	unknown	47.542	0.11
41	unknown	48.719	0.09
42	unknown	49.492	0.09
43	β -Selinene	51.017	0.07

44	α -Selinene	51.775	0.03
45	γ -Cadinene	53.373	0.02
46	unknown	54.518	0.09
47	Germacrene B	56.84	0.06
48	(E)-Nerolidol	57.724	0.92
49	m-Camphorene	67.596	0.01
	Total identified		99.48%



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