



CERTIFICATE of ANALYSIS (COA)

COMMON NAME	Pepper, Black - Organic
LATIN NAME	<i>Piper nigrum</i>
COUNTRY OF ORIGIN	Madagascar
CULTIVATION METHOD	Certified Organic (USDA, NOP)
TYPE	Essential Oil
EXTRACTION METHOD	Steam Distilled
PLANT PART	Dried Fruits
USE	Aromatherapy, Natural Perfumery

SKU	781
LOT #	5
MANUFACTURING DATE	January 2022
BEST BY DATE	January 2025

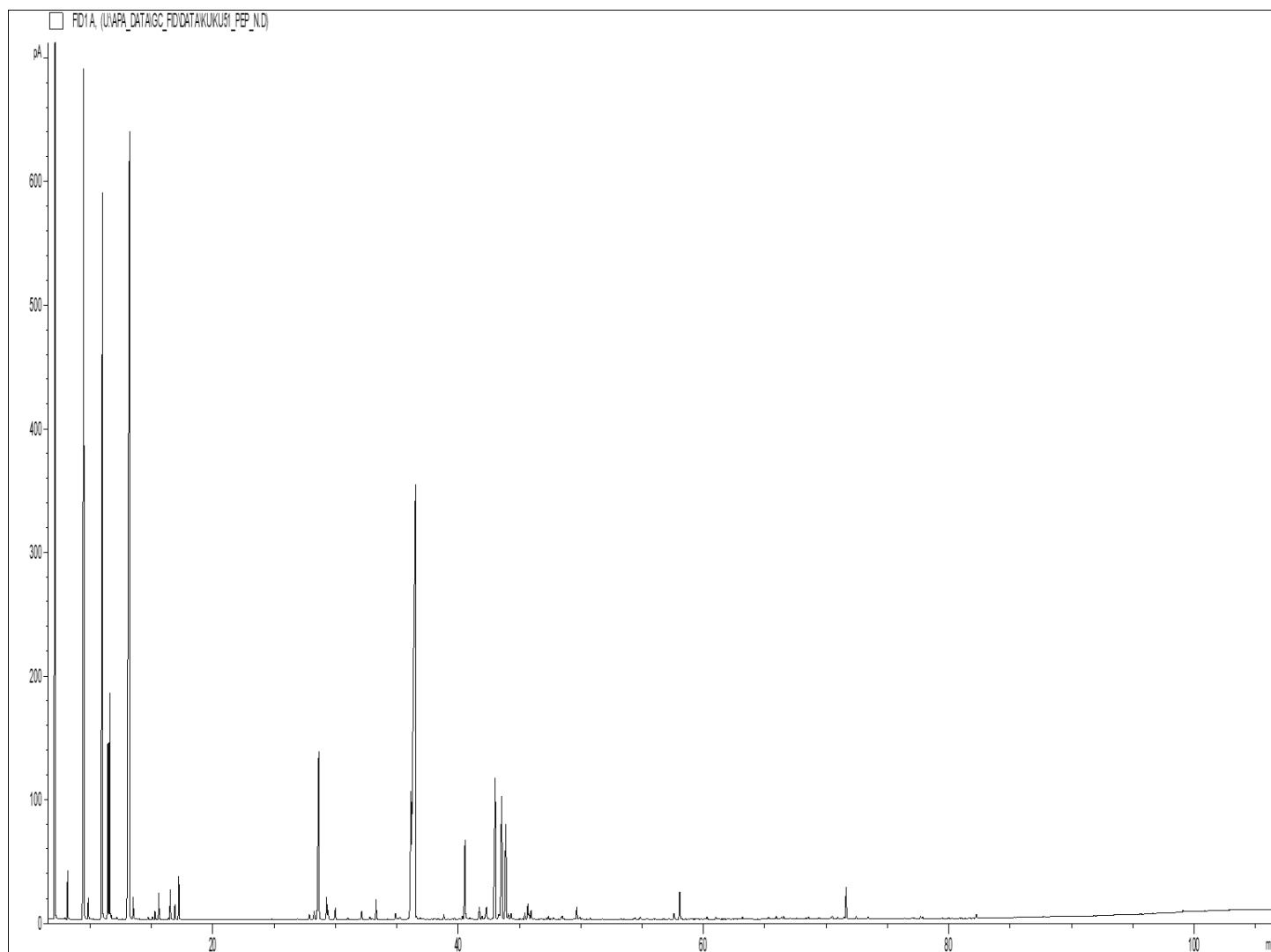
	SPECIFICATIONS (Range)	
SPECIFIC GRAVITY @20°C	0.864 – 0.884	0.875
REFRACTIVE INDEX @20°C	1.475 – 1.490	1.4804
OPTICAL ROTATION @20°C	-18° to +20°	+1.90°

PHYSICAL APPEARANCE	Transparent liquid	Conforms
COLOR	Colorless to pale yellow/green	Conforms
ODOR	Sharp, stimulating and spicy, the aroma of freshly ground pepper.	Conforms
SOLUBILITY	Soluble in alcohol and fixed oils	
SPECIAL USE INSTRUCTIONS	Dilute before use. Refrigerate to preserve freshness.	

PRIMARY CONSTITUENTS	Beta-caryophyllene (10-25%), Limonene (10-25%), Alpha-pinene (8-26%).
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THIRD PARTY LAB ANALYSIS (GCMS)

CHROMATOGRAPHIC PROFILE :



- ORGANIC PEPPER BLACK EO - SKU 781 LOT 5 -

Peaks	RT (min)	Compound name	%	Standard (%)	Allergens (%)
1	7.16	alpha-PINENE	14.47	8.0 - 26.0	14.47
2	7.18	alpha-THUYENE	0.17		
3	7.95	alpha-FENCHENE	0.01		
4	8.18	CAMPHENE	0.43		
5	9.50	beta-PINENE	12.12	7.0 - 15.0	12.12
6	9.87	SABINENE	0.20	≤ 4.0	
7	11.02	delta3-CARENE	12.08	7.0 - 16.0	
8	11.47	beta-MYRCENE	1.92		
9	11.61	alpha-PHELLANDRENE	2.20		
10	11.73	psi-LIMONENE	0.05		
11	12.03	o-CYMENE	0.01		
12	12.19	alpha-TERPINENE	0.03		0.03
13	13.22	LIMONENE	17.54	10.0 - 25.0	17.54
14	13.52	1,8-CINEOLE	0.26		
15		beta-PHELLANDRENE			
16	14.75	cis-beta-OCIMENE	0.02		
17	15.10	TERPENE ISOMER	0.04		
18	15.30	gamma-TERPINENE	0.10		
19	15.62	trans-beta-OCIMENE	0.30		
20	16.40	m-CYMENE	0.02		
21	16.54	p-CYMENE	0.36		
22	16.93	ISOTERPINOLENE	0.18		
23	17.25	TERPINOLENE	0.51		0.51
24	26.87	LIMONENE cis-1,2-EPOXIDE	0.02		
25	27.89	alpha-CUBEBENE	0.08		
26	28.28	ELEMENE ISOMER	0.15		
27	28.66	delta-ELEMENE	3.34	0.50 - 4.5	
28	29.30	ISOLEDENE	0.32		
29	29.40	YLANGENE	0.13		
30	30.00	alpha-COPAENE	0.17	≤ 0.50	
31	31.02	CAMPHOR	0.03		0.03
32	31.96	SATIVENE	0.01		
33	32.16	alpha-GURJUNENE	0.14		
34	32.81	beta1-CUBEBENE	0.05		
35	32.98	SESQUITERPENE	0.03		
36	33.33	LINALOOL	0.26		0.26
37	34.25	PINOCARVONE	0.01		
38	34.91	epsilon-CADINENE	0.14		
39	35.26	ELEMENE ISOMER	0.06		
40	36.17	beta-ELEMENE	2.16		
41		alpha-GUAIENE			
42	36.53	beta-CARYOPHYLLENE	16.82	10.0 - 25.0	16.82
43	36.62	AROMADENDRENE	0.06		

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Peaks	RT (min)	Compound name	%	Standard (%)	Allergens (%)
44	36.90	6,9-GUAIADIENE	0.05		
45	37.22	CYCLOSATIVENE	0.02		
46	37.50	SESQUITERPENE	0.01		
47	37.81	COMPOUND Mw=168	0.02		
48	38.15	SESQUITERPENE	0.02		
49	38.34	CADINA-3,5-DIENE	0.03		
50	38.85	GERMACRENE A	0.08		
51	39.54	trans-PINOCARVEOL	0.03		
52	39.73	SESQUITERPENE	0.03		
53	40.36	ZONARENE	0.06		
54	40.58	alpha-HUMULENE	1.34		
55	40.74	E-beta-FARNESENE	0.02		
56	40.96	gamma-SELINENE	0.05		
57	41.74	gamma-MUUROLENE	0.24		
58	41.96	SELINENE ISOMER	0.07		
59	42.32	alpha-TERPINEOL	0.20		0.20
60	42.40	LEDENE	0.06		
61	42.48	SESQUITERPENE Mw=202	0.02		
62	43.04	GERMACRENE D	2.87	1.0 - 6.5	
63	43.33	MUUROLADIENE ISOMER	0.10		
64	43.57	beta-SELINENE	2.30	1.0 - 4.5	
65	43.90	alpha-SELINENE	1.60	0.50 - 3.0	
66		alpha-MUUROLENE			
67	44.11	beta-BISABOLENE	0.11		
68	44.34	BICYCLOGERMACRENE	0.11		
69	44.53	EUDESMATRIENE ISOMER	0.02		
70	45.46	E,E-alpha-FARNESENE	0.10		
71	45.70	delta-CADINENE	0.23		
72	45.80	gamma-CADINENE	0.08		
73	45.96	7-epi-alpha-SELINENE	0.16		
74	46.20	METHYL SALICYLATE	0.02		0.02
75	46.81	beta-SESQUIPHELLANDRENE	0.02		
76	47.20	trans-alpha-BISABOLENE	0.03		
77	47.38	CADINA-1,4-DIENE	0.05		
78	47.58	MYRTENOL	0.01		
79	47.76	alpha-AMORPHENE	0.03		
80	48.45	trans-SABINOL	0.03		
81	48.51	SESQUITERPENE Mw=202	0.06		
82	49.46	AROMATIC COMPOUND	0.02		
83	49.69	GERMACRENE B	0.20		
84	49.95	CALAMENENE	0.05		
85	50.11	AROMATIC COMPOUND	0.01		
86	50.77	p-CYMENE-8-OL	0.03		

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Peaks	RT (min)	Compound name	%	Standard (%)	Allergens (%)
87	53.28	Epi-CUBEBOL	0.01		
88	54.43	alpha-CALACORENE	0.04		
89	54.87	HUMULENE EPOXIDE	0.06		
90	56.07	CUBEBOL	0.02		
91	56.75	AROMATIC COMPOUND	0.01		
92	57.62	ISOCARYOPHYLLENE OXIDE	0.10		
93	58.09	CARYOPHYLLENE OXIDE	0.44	≤ 1.0	
94	60.31	SESQUITERPENOL	0.04		
95	61.02	EPOXY-6,7-HUMULENE	0.04		
96	61.26	NEROLIDOL	0.01		
97	61.98	Epi-CUBENOL	0.02		
98	62.38	CUBENOL	0.01		
99	62.63	AROMATIC COMPOUND	0.01		
100	62.90	GLOBULOL	0.03		
101	63.18	ELEMOL	0.04		
102	63.33	SESQUITERPENIC OXIDE	0.02		
103	63.66	SESQUITERPENOL	0.02		
104	65.33	SPATHULENOL	0.04		
105	65.94	EUDESMOL ISOMER	0.04		
106	66.38	7-epi-beta-EUDESMOL	0.05		
107	66.55	beta-COPAEN-4-alpha-OL	0.04		
108	67.03	EUGENOL	0.03		0.03
109	67.57	T-CADINOL	0.02		
110	68.07	COMPOUND Mw=218	0.02		
111	68.37	2-ACETYLCYCLOPENTANONE	0.03		
112	68.56	alpha-MUUROLOL	0.04		
113	69.00	delta-CADINOL	0.03		
114	69.41	POGOSTOL	0.03		
115	69.70	DITERPENE	0.01		
116	69.95	alpha-BISABOLOL	0.01		
117	70.38	SESQUITERPENIC OXIDE	0.02		
118	70.49	alpha-CADINOL	0.06		
119	70.94	AROMATIC COMPOUND	0.03		
120	71.45	SESQUITERPENOL	0.04		
121	71.63	beta-NOOTKATOL	0.51		
122	72.44	AROMATIC COMPOUND	0.04		
123	73.42	CARYOPHYLLA-2,6-DIEN-5-alpha-OL	0.04		
124	76.41	AROMATIC COMPOUND	0.01		
125	77.05	SESQUITERPENIC OXIDE	0.04		
126	77.21	COMPOUND Mw=220	0.02		
127	77.69	SESQUITERPENIC OXIDE	0.03		
128	77.85	AROMATIC COMPOUND	0.03		
129	82.24	COMPOUND Mw=220	0.07		

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Peaks	RT (min)	Compound name	%	Standard (%)	Allergens (%)
130	85.32	AROMATIC COMPOUND	0.01		
131	87.80	PHYTOL	0.01		
132	88.58	NOOTKATOL ISOMER	0.01		
		TOTAL	99.82		62.01

This Essential Oil is a 100% pure and natural product. It does not contain any artificial ingredients or adulteration of any kind to the best of our knowledge. The analysis and statements herein constitute the most complete information available to Eden Botanicals. This product is guaranteed by Eden Botanicals to be of excellent quality.

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