

Geranium Pelargonium graveolens

Batch No. ZA-59118
 South Africa

Monoterpenes 1%

α pinene	0.33
limonene	0.18
myrcene	0.16
(E) β ocimene	0.08
α phellandrene	0.08
(Z) β ocimene	0.06
para-cymene	0.06
terpinolene	0.02
1-epi-bicyclosquiphellandrene	0.02
β pinene	0.01

Monoterpenols 51.89%

citronellol	23.74
geraniol	16.03
linalool	10.44
α terpineol	0.62
nerol	0.51
trans-myrtanol	0.14
cis-linalool oxide	0.14
neoisomenthol	0.12
trans-linalool oxide	0.07
isopulegol	0.04
cis-isogeraniol	0.03
para-mentha-1,5-dien-8.01-ol	0.01

Aldehydes 0.89%

geranial	0.56
neral	0.33

Esters 22.09%

citronellyl formate	9.76
geranyl formate	5.53
geranyl tiglate	1.33
geranyl butyrate	1.09
neryl propionate	1.03
citronellyl butanoate	0.68
2-phenylethyl tiglate	0.39
geranyl isobutyrate	0.38
citronellyl acetate	0.31
geranyl acetate	0.31
citronellyl tiglate	0.28
neryl formate	0.27
geranyl 2-methylbutyrate	0.26
geranyl valerate	0.12
2-phenylethyl propionate	0.08
phenylethyl isobutyrate	0.08
geranyl isovalerate	0.08
geranyl caproate	0.05
(E,E) farnesyl acetate	0.03
geranyl caprylate	0.02
neryl acetate	0.01

Ethers 1.21%

cis-Rose oxide	0.85
trans-Rose oxide	0.34
1,8-cineole	0.02

Ketones 9.95%

menthone	8.15
isomenthone	1.69
6-methyl-5-hepten-2-one	0.06
6-methyl-3,5-heptadec-2-one	0.05

Sesquiterpenes 10.54%

guaiaiene 6,9	5.35
β caryophyllene	0.86
β bourbonene	0.75
germacrene d	0.75
α guaiene	0.51
aromadendrene	0.39
δ cadinene	0.38
α copaene	0.23
α humulene	0.19
β selinene	0.18
β elemene	0.15
α muurolene	0.12
β copaene	0.11
dauca-5,8-diene	0.11
allo-aromadendrene	0.08
trans-calamenene	0.07
β cadinene	0.06
α cubebene	0.05
γ muurolene	0.05
α selinene	0.05
γ cadinene	0.05
α gurjunene	0.02
α calacorene	0.02
(E,E) α farnesene	0.01

Sesquiterpenols 0.5%

(Z,E) farnesol	0.15
1,10-di-epi-Cubenol	0.11
(Z) nerolidol	0.11
1-epi-Cubenol	0.08
(E,E) farnesol	0.04
viridiflorol	0.01

Other 0.03%

3-methylpentanol	0.02
cis-Hex-3-en-1-ol	0.01

Client



Source



Geranium (*Pelargonium graveolens*)
ZA-59118

Sample

Geranium (*Pelargonium graveolens*)

Batch #:..... ZA-59118

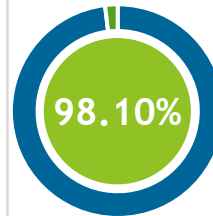
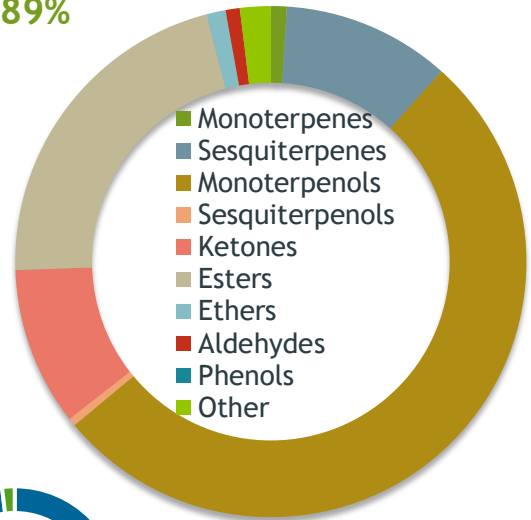
Type:..... Essential Oil

CAS Number:.... 8000-46-2

Nature's Gift

Monoterpenols

51.89%



Percentage Identified

Client



Website



Primary

23.74%

Citronellol

16.03

Geraniol

10.44%

Linalool

Result



Conclusion

No adulterants, diluents, or contaminants were detected via this method. This oil meets the expected profile for genuine Essential Oil of Geranium (*Pelargonium graveolens*)

Internal Number: | EVS-4040



Essential Validation Services

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Alan Chastain

Monoterpenes	1.00%
Sesquiterpenes	10.54%
Monoterpenols	51.89%
Sesquiterpenols	0.50%
Ketones	9.95%
Esters	21.29%
Ethers	1.21%
Aldehydes	0.89%
Phenols	0.00%
Other	1.93%

- Essential Oil testing is performed by using qualitative GC-MS. Method: SOP.T.01 Client Method
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Client



Source

Geranium (*Pelargonium graveolens*)

ZA-59118

Total Percentage		98.10%		
Number	RT	Area %	Compound Name	Chemical Family
1	5.46	0.02%	3-Methylpentanol	Aliphatic Alcohol
2	5.72	0.01%	cis-Hex-3-en-1-ol	Aliphatic Alcohol
3	8.27	0.33%	alpha-Pinene	Monoterpene
4	10.01	0.01%	beta-Pinene	Monoterpene
5	10.40	0.06%	6-Methyl-5-hepten-2-one	Aliphatic Ketone
6	10.59	0.16%	Myrcene	Monoterpene
7	11.24	0.08%	alpha-Phellandrene	Monoterpene
8	12.04	0.06%	para-Cymene	Monoterpene
9	12.25	0.18%	Limonene	Monoterpene
10	12.37	0.02%	1,8-Cineole	Monoterpene Ether
11	12.63	0.06%	(Z)-beta-Ocimene	Monoterpene
12	13.09	0.08%	(E)-beta-Ocimene	Monoterpene
13	14.13	0.14%	cis-Linalool oxide (5) (furanoid)	Monoterpenol
14	14.80	0.02%	Terpinolene	Monoterpene
15	14.87	0.07%	trans-Linalool oxide (5) (furanoid)	Monoterpenol
16	15.57	10.44%	Linalool	Monoterpenol
17	15.65	0.05%	6-Methyl-3,5-heptadien-2-one	Monoterpene Ketone
18	15.97	0.85%	cis-Rose oxide	Monoterpene Ether
19	16.69	0.34%	trans-Rose oxide	Monoterpene Ether
20	17.67	0.04%	Isopulegol	Monoterpenol
21	17.99	1.69%	Isomenthone	Monoterpene Ketone
22	18.42	8.15%	Menthone	Monoterpene Ketone
23	18.75	0.01%	para-Mentha-1,5-dien-8-ol	Monoterpenol
24	19.51	0.12%	Neoisomenthol	Monoterpenol
25	19.83	0.62%	alpha-Terpineol	Monoterpenol
26	21.25	0.51%	Nerol	Monoterpenol
27	21.51	23.74%	Citronellol	Monoterpenol
28	21.84	0.33%	Neral	Monoterpene Aldehyde
29	22.55	16.03%	Geraniol	Monoterpenol
30	22.92	0.14%	trans-Myrtanol	Monoterpenol
31	23.05	0.03%	cis-Isogeraniol	Monoterpenol
32	23.18	0.56%	Geranial	Monoterpene Aldehyde
33	23.50	9.76%	Citronellyl formate	Monoterpene Ester
34	23.61	0.27%	Neryl formate	Monoterpene Ester
35	24.58	5.53%	Geranyl formate	Monoterpene Ester

Client



Source



Geranium (Pelargonium graveolens)
ZA-59118

Number	RT	Area %	Compound Name	Chemical Family
36	26.608	0.05%	alpha-Cubebene	Sesquiterpene
37	26.72	0.08%	2-Phenylethyl propionate	Monoterpene Ester
38	26.82	0.31%	Citronellyl acetate	Monoterpene Ester
39	27.20	0.01%	Neryl acetate	Monoterpene Ester
40	27.80	0.23%	alpha-Copaene	Sesquiterpene
41	28.05	0.31%	Geranyl acetate	Monoterpene Ester
42	28.12	0.75%	beta-Bourbonene	Sesquiterpene
43	28.42	0.15%	beta-Elemene	Sesquiterpene
44	28.57	0.08%	Phenylethyl isobutyrate	Phenolic ester
45	29.11	0.02%	alpha-Gurjunene	Sesquiterpene
46	29.59	0.86%	beta-Caryophyllene	Sesquiterpene
47	30.04	0.11%	beta-Copaene	Sesquiterpene
48	30.32	0.51%	alpha-Guaiene	Sesquiterpene
49	30.57	5.35%	6,9-Guaiadiene	Sesquiterpene
50	30.84	0.39%	Aromadendrene	Sesquiterpene
51	31.07	0.19%	alpha-Humulene	Sesquiterpene
52	31.25	0.08%	allo-Aromadendrene	Sesquiterpene
53	31.82	1.03%	Neryl propionate	Monoterpene Ester
54	31.93	0.05%	gamma-Muurolene	Sesquiterpene
55	32.12	0.75%	Germacrene D	Sesquiterpene
56	32.34	0.11%	Dauca-5,8-diene	Sesquiterpene
57	32.43	0.18%	beta-Selinene	Sesquiterpene
58	32.55	0.02%	1-epi-Bicyclosesquiphellandrene	Monoterpene
59	32.73	0.05%	alpha-Selinene	Sesquiterpene
60	32.89	0.12%	alpha-Muurolene	Sesquiterpene
61	33.09	0.06%	beta-Cadinene	Sesquiterpene
62	33.23	0.01%	(E,E)-alpha-Farnesene	Sesquiterpene
63	33.39	0.38%	Geranyl isobutyrate	Monoterpene Ester
64	33.69	0.38%	delta-Cadinene	Sesquiterpene
65	33.78	0.07%	trans-Calamenene	Sesquiterpene
66	34.07	0.68%	30.05 Citronellyl butanoate	0.00
67	34.22	0.05%	gamma-Cadinene	Sesquiterpene
68	34.35	0.11%	(Z)-Nerolidol	Sesquiterpenol
69	34.51	0.02%	alpha-Calacorene	Sesquiterpene
70	35.26	1.09%	Geranyl butyrate	Monoterpene Ester
71	36.19	0.39%	2-Phenylethyl tiglate	Phenolic Ester

ESSENTIAL VALIDATION SERVICES | 74 / SW 2ND AVE GAINESVILLE, FLORIDA 32601 | 352-301-5044

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