

Laboratory Test Report

SAMPLE NAME : Geranium Bourbon
CLIENT NAME : Makaaina LLC
CLIENT LOT # : 23335130L
APRC LOT# : MAK240314F

Column : ZB5 (60 m length × 0.25 mm inner diameter × 0.25 µm film thickness)
Instrument : Shimadzu GCMS-QP2010 Ultra
Carrier gas : Helium 80 psi
Temperature ramp : 2 degrees Celsius per minute up to 260-degree Celsius
Split ratio : 30:1
Sample preparation : 5% w/v solution with Dichloromethane

Interpretation on this sample

The analysis of Geranium Bourbon sample meets the standard chemical profile of Pelargonium graveolens essential oil.

Analyzed by : Dr Prabodh Satyal
Reviewed by : Ambika Poudel

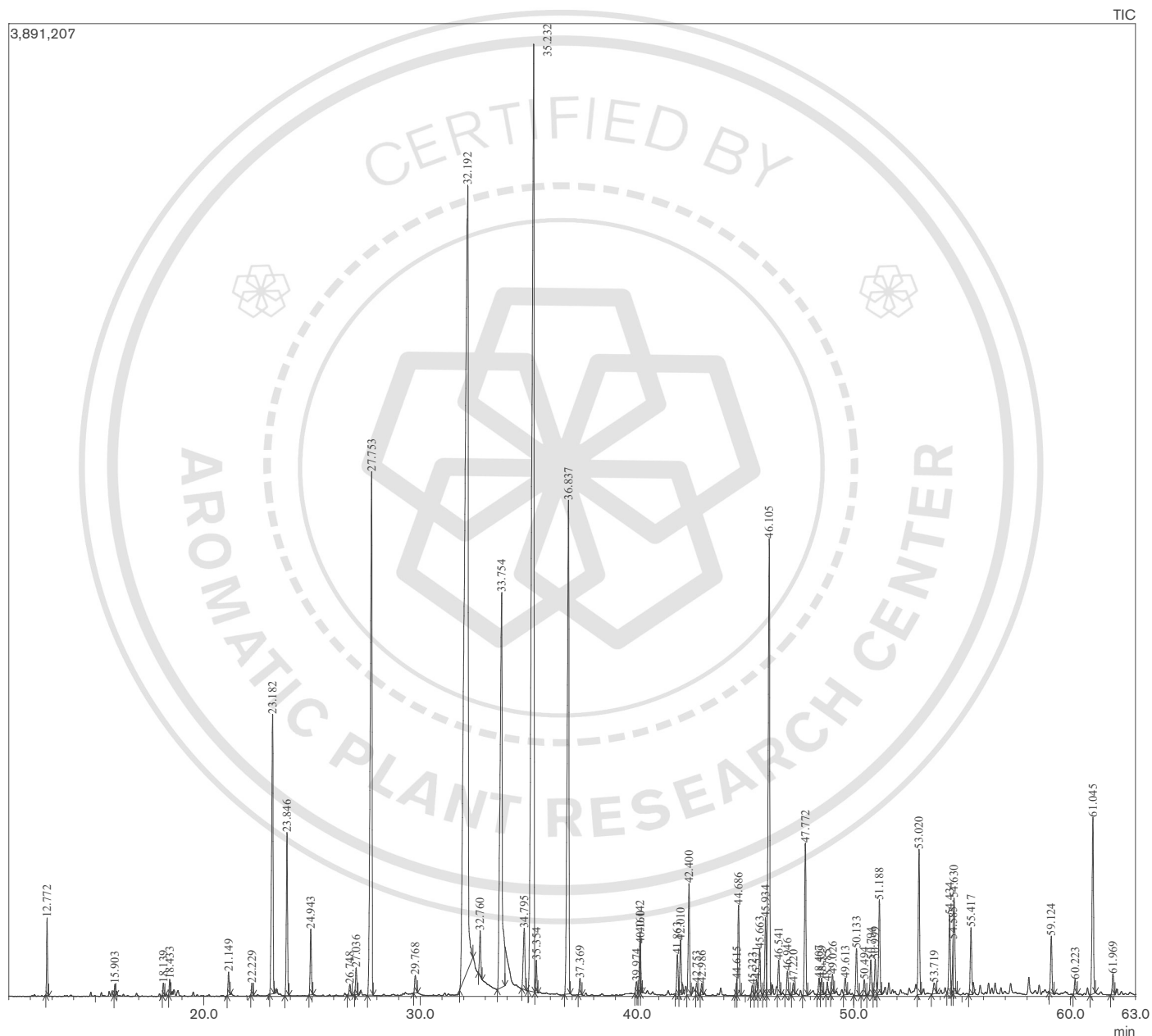
Issued Date : 3/15/2024

GCMS Analysis

Sample Information

Analyzed by : Dr. Prabodh Satyal
Analyzed : 3/15/2024 2:57:44 PM
Sample Type : Essential Oil
Sample Name : Geranium Bourbon
Client Name : Makaaina LLC
Client Lot# : 23335130L
APRC Lot# : MAK240314F
Injection Volume : 0.30

Chromatogram



Peak Report

Peak#	R.Time	Name	Area%
1	12.772	alpha-Pinene	0.58
2	15.903	Myrcene	0.09
3	18.139	para-Cymene	0.11
4	18.433	Limonene	0.13
5	21.149	cis-Linalool oxide (furanoid)	0.22
6	22.229	trans-Linalool oxide (furanoid)	0.12
7	23.182	Linalool	3.46
8	23.846	cis-Rose oxide	1.59
9	24.943	trans-Rose oxide	0.65
10	26.748	Citronellal	0.13
11	27.036	Menthone	0.28
12	27.753	Isomenthone	7.68
13	29.768	alpha-Terpineol	0.21
14	32.192	Citronellol	23.46
15	32.760	Neral	0.46
16	33.754	Geraniol	7.53
17	34.795	Geranial	0.87
18	35.232	Citronellyl formate	18.39
19	35.354	Neryl formate	0.28
20	36.837	Geranyl formate	7.00
21	37.369	Terpineol acetate	0.18
22	39.974	alpha-Cubebene	0.14
23	40.142	Citronellyl acetate	0.51
24	40.160	2-Phenyl ethyl propanoate	0.20
25	41.863	alpha-Copaene	0.45
26	42.010	Geranyl acetate	0.60
27	42.400	beta-Bourbonene	1.27
28	42.753	beta-Elemene	0.13
29	42.986	Phenyl ethyl isobutyrate	0.12
30	44.615	beta-Ylangene	0.13
31	44.686	beta-Caryophyllene	1.03
32	45.323	beta-Copaene	0.12
33	45.521	trans-alpha-Bergamotene	0.20
34	45.663	alpha-Guaiene	0.56
35	45.934	Citronellyl propionate	0.88
36	46.105	6,9-Guaiadiene	5.86
37	46.541	Isogermaacrene D	0.39
38	46.946	alpha-Humulene	0.27
39	47.220	allo-Aromadendrene	0.13
40	47.772	Geranyl propionate	1.73
41	48.407	Citronellol isobutanoate	0.19
42	48.529	Germacrene D	0.18
43	48.785	Phenyl ethyl 2-methyl butanoate	0.14
44	49.026	beta-Selinene	0.22
45	49.613	alpha-Murolene	0.22
46	50.133	Geranyl isobutyrate	0.55
47	50.494	gamma-Cadinene	0.19
48	50.794	delta-Cadinene	0.46
49	50.999	trans-Calamenene	0.46
50	51.188	Citronellyl butanoate	1.11
51	53.020	Geranyl butanoate	1.63
52	53.719	Citronellyl isovalerate	0.17
53	54.434	Furopolargone B	0.91
54	54.585	Caryophyllene oxide	0.28
55	54.630	Phenyl ethyl tiglate	1.25
56	55.417	Geranyl isovalerate	0.78
57	59.124	Citronellyl tiglate	0.64
58	60.223	Citronellyl isohexanoate	0.17
59	61.045	Geranyl tiglate	2.09
60	61.969	Geranyl caproate	0.25
			100.00