



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: FA0101

ESSENTIAL OIL: FRAGONIA
BOTANICAL NAME: AGONIS FRAGRANS
ORIGIN: AUSTRALIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF FRAGONIA OIL	%
1,8-CINEOLE + LIMONENE	34.5
α -PINENE	24.7
LINALOOL	8.7
α -TERPINEOL	6.6
p-Cymene	3.64
MYRTENOL	3.3
TERPINEN-4-ol	3.0
β -PINENE	1.6
MYRCENE	1.2
γ -TERPINENE	1.1
GERANIOL	1.0

Comments from Robert Tisserand: A very nice Fragonia oil with constituents in expected amounts and no sign of adulteration.

Date : December 14, 2016

SAMPLE IDENTIFICATION

Internal code : 16L01-PTH7-1-DM

Customer identification : Fragonia - FA0101511R

Type : Essential oil

Source : *Agonis fragrans*

Customer : Plant Therapy

ANALYSIS

Method : PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

Analyst : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2016-12-12

Checked and approved by :



Alexis St-Gelais, M. Sc., chimiste 2013-174

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IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
Ethanol	0.34*	497	0.01	0.02	789	0.50*	Aliphatic alcohol
cis-Hex-3-en-1-ol	2.50	865	0.04	0.04	1311	4.48	Aliphatic alcohol
Hashishene	3.16	913	0.01	0.79	954	0.89*	Monoterpene
α-Thujene	3.27	919	0.27	[0.79]	954	0.89*	Monoterpene
α-Pinene	3.44	929	24.73	24.60	952	0.89	Monoterpene
Camphene	3.66*	943	0.05	0.07	991	1.05	Monoterpene
α-Fenchene	3.66*	943	[0.05]	0.05	981	1.01	Monoterpene
Thuja-2,4(10)-diene	3.75	948	0.02	0.45	1051	1.46*	Monoterpene
Sabinene	4.09	969	0.41	[0.45]	1051	1.46*	Monoterpene
β-Pinene	4.15	973	1.57	1.57	1035	1.33	Monoterpene
Benzaldehyde	4.20	975	0.01	0.01	1430	6.24	Simple phenolic
Myrcene	4.43	990	1.22	1.15	1111	1.94*	Monoterpene
Pseudolimonene	4.64	1002	0.05	[1.15]	1111	1.94*	Monoterpene
α-Phellandrene	4.70	1005	0.06	0.08	1104	1.88	Monoterpene
α-Terpinene	4.89	1016	0.30	0.33	1119	2.02	Monoterpene
1,8-Cineole	5.27*	1037	37.66	34.50	1149	2.39*	Monoterp. ether
Limonene	5.27*	1037	[37.66]	[34.50]	1149	2.39*	Monoterpene
para-Cymene	5.27*	1037	[37.66]	3.64	1203	3.00	Monoterpene
cis-β-Ocimene	5.30	1038	0.02	1.03	1183	2.78*	Monoterpene
trans-β-Ocimene	5.48	1048	0.03	0.02	1197	2.94	Monoterpene
γ-Terpinene	5.67	1059	1.07	[1.03]	1183	2.78*	Monoterpene
cis-Linalool oxide (fur.)	5.96	1074	0.13	0.12	1369	5.30	Monoterp. alcohol
Terpinolene	6.13	1084	0.22	0.21	1218	3.19	Monoterpene
trans-Linalool oxide (fur.)	6.27	1091	0.10	0.09	1396	5.70	Monoterp. alcohol
para-Cymenene	6.35	1096	0.04	0.03	1361	5.19	Monoterpene
α-Pinene oxide	6.45	1099	0.09	0.08	1291	4.20	Monoterp. ether
Linalool	6.77	1111	8.71	8.84	1487	7.31*	Monoterp. alcohol
Hotrienol	6.81	1113	0.08	3.80	1525	8.05*	Monoterp. alcohol
cis-Rose oxide	6.87	1115	0.07				Monoterp. ether
trans-Rose oxide	7.09	1123	0.01				Monoterp. ether
endo-Fenchol	7.13	1125	0.04	0.04	1504	7.62	Monoterp. alcohol
cis-para-Menth-2-en-1-ol	7.19*	1127	0.07	[8.84]	1487	7.31*	Monoterp. alcohol
α-Campholenal	7.19*	1127	[0.07]				Monoterp. aldehyde
trans-Pinocarveol	7.58	1142	0.24	0.23	1555	8.96	Monoterp. alcohol
trans-para-Menth-2-en-1-ol	7.71	1146	0.03	0.13	1560	9.10*	Monoterp. alcohol
trans-Verbenol	7.75	1148	0.02	0.02	1608	10.55	Monoterp. alcohol
Nerol oxide	7.80	1150	0.08				Monoterp. ether
Pinocarvone	8.13	1162	0.02	0.01	1470	7.00	Monoterp. ketone
δ-Terpineol	8.62	1180	0.40	0.46	1580	9.71	Monoterp. alcohol
Terpinen-4-ol	8.79	1187	3.04	[3.80]	1525	8.05*	Monoterp. alcohol
Myrtenal	9.23	1200	0.31	0.23	1533	8.27	Monoterp. aldehyde

α -Terpineol	9.54	1207	6.57	6.58	1621	10.93*	Monoterp. alcohol
Myrtenol	9.62	1209	3.31	3.52	1694	14.07	Monoterp. alcohol
Verbenone	9.73	1212	0.03	0.04	1600	10.30	Monoterp. ketone
<i>trans</i> -Carveol	10.49	1229	0.06	0.08	1756	17.10	Monoterp. alcohol
Citronellol	10.61	1231	0.48	0.48	1720	15.21	Monoterp. alcohol
Nerol	10.85	1237	0.43	0.57	1697	14.20	Monoterp. alcohol
Neral	11.30	1247	0.07	0.06	1606	10.48	Monoterp. aldehyde
Carvone	11.38	1249	0.02	0.01	1635	11.44	Monoterp. ketone
<i>cis</i> -Ascaridol glycol	11.53	1252	0.03				Monoterp. alcohol
Geraniol	11.95	1262	1.01	0.98	1772	18.08	Monoterp. alcohol
<i>trans</i> -Myrtanol	12.35	1270	0.37	0.36	1761	17.41	Monoterp. alcohol
Geranial	12.57	1275	0.07	0.09	1627	11.13	Monoterp. aldehyde
<i>trans</i> -Ascaridol glycol	13.40	1294	0.05				Monoterp. alcohol
Myrtenyl acetate	15.05	1319	0.36	0.37	1595	10.14	Monoterp. ester
Methyl geranate	15.28	1323	0.15	0.16	1643	11.81	Monoterp. ester
α -Copaene	17.66	1359	0.02	0.02	1434	6.32	Sesquiterpene
β -Elemene	18.67	1375	0.02	[3.80]	1525	8.05*	Sesquiterpene
Geranyl acetate	19.17	1383	0.05	0.05	1682	13.56	Monoterp. ester
α -Gurjunene	19.38	1386	0.03	0.03	1465	6.90	Sesquiterpene
Methyl (<i>E</i>)-cinnamate	19.80	1392	0.05	0.10	1946	29.23	Phenylpropanoid ester
β -Caryophyllene	20.32	1399	0.52	[3.80]	1525	8.05*	Sesquiterpene
Aromadendrene	21.68	1416	0.20	[3.80]	1525	8.05*	Sesquiterpene
Seychellene	22.32	1423	0.05	0.14	1539	8.47	Sesquiterpene
α -Humulene	23.11	1433	0.55	0.55	1587	9.89	Sesquiterpene
allo-Aromadendrene	23.33	1436	0.09	[0.13]	1560	9.10*	Sesquiterpene
β -Selinene	25.88	1466	0.03	[6.58]	1621	10.93*	Sesquiterpene
Viridiflorene	26.10	1469	0.22	[6.58]	1621	10.93*	Sesquiterpene
Bicyclgermacrene	26.53	1473	0.36	0.20	1641	11.74	Sesquiterpene
δ -Cadinene	28.97	1504	0.03	0.03	1672	13.08	Sesquiterpene
<i>trans</i> -Calamenene	29.38	1509	0.07	0.06	1734	15.87	Sesquiterpene
Palustrol	32.70	1555	0.02	0.02	1816	20.64	Sesquiterp. alcohol
Caryophyllene oxide	33.58	1567	0.15	0.10	1845	22.38	Sesquiterp. ether
Spathulenol	33.83	1570	0.26	0.24	2019	33.53	Sesquiterp. alcohol
Globulol	34.17	1575	0.15	0.11	1966	30.41	Sesquiterp. alcohol
Viridiflorol	34.67	1582	0.13	0.09	1975	30.94	Sesquiterp. alcohol
Guaiol	34.83	1584	0.07	0.04	2007	32.78	Sesquiterp. alcohol
Humulene epoxide II	35.29	1590	0.14	0.12	1895	25.85	Sesquiterp. ether
Isospathulenol	36.94	1627	0.14	0.14	2122	37.65	Sesquiterp. alcohol
α -Eudesmol	37.76*	1647	0.21	0.02	2118	37.51	Sesquiterp. alcohol
β -Eudesmol	37.76*	1647	[0.21]	0.14	2108	37.19*	Sesquiterp. alcohol
Total identified			97.80%	98.14%			

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

Note: no correction factor was applied

OTHER DATA

Physical aspect : Clear liquid

Refractive index : 1.4690 ± 0.0003 (20 °C)

CONCLUSION

No adulterant, contaminant or diluent were detected using this method.



