



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: B30103

ESSENTIAL OIL: BERGAMOT

BOTANICAL NAME: CITRUS AURANTIUM SSP. AMARA

ORIGIN: ITALY

KEY CONSTITUENTS PRESENT IN THIS BATCH OF BERGAMOT OIL	%
LIMONENE	38.0
LINALYL ACETATE	29.3
LINALOOL	15.2
γ-TERPINENE	6.3
β-PINENE	5.9
α-PINENE	1.0

Comments from Robert Tisserand: Very fine Bergamot odor profile. No red flags in the lab report.

Date : March 24, 2017

SAMPLE IDENTIFICATION

Internal code : 17C08-PTH1-1-DM

Customer identification : Bergamot - Italy - B3010371R

Type : Essential oil

Source : *Citrus aurantium ssp. amara*

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 : 2017-03-21

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	0.35	632	0.02	0.02	814	0.72	Aliphatic alcohol
α -Thujene	3.30	922	0.08	0.08	959	1.22	Monoterpene
α -Pinene	3.40	928	1.02	0.99	947	1.18	Monoterpene
Camphene	3.69	945	0.02	0.02	998	1.47	Monoterpene
Sabinene	4.12	970	0.76	0.75	1059	2.01	Monoterpene
β -Pinene	4.19	975	5.88	5.75	1043	1.86	Monoterpene
Myrcene	4.45	990	0.73	0.71	1117	2.59	Monoterpene
α -Phellandrene	4.73*	1006	0.05	0.02	1111	2.50	Monoterpene
Δ 3-Carene	4.73*	1006	[0.05]	0.02	1096	2.31	Monoterpene
α -Terpinene	4.91	1016	0.07	0.06	1124	2.68	Monoterpene
Limonene	5.21*	1033	38.91	37.98	1150	3.01	Monoterpene
para-Cymene	5.21*	1033	[38.91]	0.32	1210	3.82	Monoterpene
1,8-Cineole	5.21*	1033	[38.91]	0.17	1152	3.04	Monoterp. ether
<i>cis</i> - β -Ocimene	5.32	1039	0.02	6.27	1193	3.58*	Monoterpene
<i>trans</i> - β -Ocimene	5.50	1048	0.05	0.05	1203	3.72	Monoterpene
γ -Terpinene	5.71	1060	6.33	[6.27]	1193	3.58*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	5.96	1074	0.04	0.04	1379	6.38	Monoterp. alcohol
<i>cis</i> -Sabinene hydrate	5.99	1075	0.02	0.06	1408	6.88*	Monoterp. alcohol
<i>trans</i> -Linalool oxide (fur.)	6.27	1091	0.05	[0.06]	1408	6.88*	Monoterp. alcohol
Linalool	6.68	1109	15.20	15.24	1502	9.13	Monoterp. alcohol
Terpinen-4-ol	8.66	1181	tr	0.01	1528	10.03	Monoterp. alcohol
α -Terpineol	9.28	1202	0.01				Monoterp. alcohol
Decanal	9.86	1215	0.11	0.12	1424	7.25	Monoterp. aldehyde
Neral	11.10	1243	0.10				Monoterp. aldehyde
Linalyl acetate	11.53	1252	29.29	30.06	1511	9.41	Monoterp. ester
Geranial	12.51	1274	0.03	0.03	1650	15.17	Monoterp. aldehyde
Neryl acetate	17.68	1361	0.34	0.35	1660	15.72	Monoterp. ester
Geranyl acetate	19.15	1383	0.34	0.34	1693	17.42	Monoterp. ester
β -Caryophyllene	20.34	1401	0.04	0.05	1523	9.80	Sesquiterpene
Total identified			99.51%	99.51%			

*: 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 : Faintly yellow liquid

Refractive index : 1.4613 \pm 0.0003 (20 °C)

CONCLUSION

No adulterant, contaminant or diluent were detected using this method. However, Italian bergamot should feature β -bisabolene and a higher content of geranial.



