



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: M20104

ESSENTIAL OIL: MARJORAM SWEET
BOTANICAL NAME: ORIGANUM MAJORANA
ORIGIN: EGYPT

KEY CONSTITUENTS PRESENT IN THIS BATCH OF MARJORAM SWEET OIL	%
TERPINEN-4-OL	22.2
trans-SABINENE HYDRATE + LINALOOL	19.5
γ-TERPINENE	12.6
SABINENE	8.2
α-TERPINENE	7.7
cis-SABINENE HYDRATE	3.8
α-TERPINEOL	3.1
TERPINOLENE	2.9
β-CARYOPHYLLENE	2.3
LIMONENE	2.2
MYRCENE	2.2
LINALYL ACETATE	1.8
β-PHELLANDRENE	1.7
cis-PARA-MENTH-2-EN-1-OL	1.5
BICYCLOGERMACRENE	1.1
p-CYMENE	1.3

Comments from Robert Tisserand: Fresh, green, herbaceous odor quality. Constituents are in expected amounts.

Date : May 25, 2017

SAMPLE IDENTIFICATION

Internal code : 17E19-PTH14-1-DM

Customer identification : Marjoram - Egypt - M2010472R

Type : Essential oil

Source : *Origanum majorana*

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 : 2017-05-25

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.	
<i>cis</i> -Hex-3-en-1-ol	2.47	865	0.03	0.02	1324	5.27	Aliphatic alcohol
<i>trans</i> -Hex-2-en-1-ol	2.66	879	0.01	0.01	1353	5.72	Aliphatic alcohol
Hashishene	3.21	916	0.02	0.78	945	1.08*	Monoterpene
α -Thujene	3.31	923	0.59	0.59	954	1.13	Monoterpene
α -Pinene	3.42	929	0.81	[0.78]	945	1.08*	Monoterpene
Camphene	3.71	946	0.03	0.03	1008	1.35	Monoterpene
Sabinene	4.15	973	8.23	8.09	1064	1.88	Monoterpene
β -Pinene	4.20	976	0.45	0.43	1045	1.69	Monoterpene
Myrcene	4.48	992	2.22	2.14	1118	2.41*	Monoterpene
Pseudolimonene	4.69	1004	0.06	[2.14]	1118	2.41*	Monoterpene
α -Phellandrene	4.75	1007	0.29	0.33	1110	2.32	Monoterpene
α -Terpinene	4.96	1019	7.74	7.71	1126	2.53	Monoterpene
para-Cymene	5.12	1028	1.27	1.29	1208	3.60	Monoterpene
Limonene	5.17	1030	2.23	2.06	1142	2.73	Monoterpene
β -Phellandrene	5.20	1032	1.71	1.95	1148	2.81*	Monoterpene
1,8-Cineole	5.23	1033	0.12	[1.95]	1148	2.81*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.34	1040	0.03	0.04	1199	3.47	Monoterpene
<i>trans</i> - β -Ocimene	5.52	1050	0.05	0.06	1202	3.51	Monoterpene
γ -Terpinene	5.75	1062	12.64	12.59	1193	3.38	Monoterpene
<i>cis</i> -Sabinene hydrate	6.04	1078	3.76	3.83	1407	6.57	Monoterp. alcohol
Terpinolene	6.20	1087	2.89	2.85	1225	3.82	Monoterpene
para-Cymenene	6.38	1097	0.01	0.01	1368	5.94	Monoterpene
<i>trans</i> -Sabinene hydrate	6.74*	1111	19.51	18.97	1485	8.30	Monoterp. alcohol
Linalool	6.74*	1111	[19.51]	2.41	1495	8.51*	Monoterp. alcohol
<i>cis</i> -para-Menth-2-en-1-ol	7.18	1127	1.53	[2.41]	1495	8.51*	Monoterp. alcohol
<i>trans</i> -Pinocarveol	7.55	1140	0.08	0.06	1569	10.80	Monoterp. alcohol
<i>trans</i> -para-Menth-2-en-1-ol	7.68	1145	0.86	0.87	1558	10.41	Monoterp. alcohol
Terpinen-4-ol	8.87	1189	22.24	22.45	1536	9.63	Monoterp. alcohol
<i>cis</i> -Sabinyl acetate	9.29	1203	0.28				Monoterp. ester
α -Terpineol	9.39	1205	3.12	3.03	1629	13.02	Monoterp. alcohol
<i>trans</i> -Piperitol	9.83	1215	0.42	0.40	1671	15.13*	Monoterp. alcohol
Nerol	10.48	1229	0.05	0.06	1733	18.39	Monoterp. alcohol
Linalyl acetate	11.37	1249	1.82	1.88	1500	8.64	Monoterp. ester
Geraniol	11.70	1256	0.11	0.10	1784	21.69	Monoterp. alcohol
Geranial	12.61	1276	0.03	0.03	1661	14.67	Monoterp. aldehyde
<i>trans</i> -Pinocarvyl acetate	13.53	1297	0.04	0.04	1544	9.92	Monoterp. ester
Carvacrol	15.71	1331	0.06	0.05	2129	39.80	Monoterp. alcohol
Neryl acetate	17.75	1362	0.03	[0.40]	1671	15.13*	Monoterp. ester
β -Cubebene	18.10	1367	0.02	0.01	1472	7.98	Sesquiterpene
Geranyl acetate	19.22	1384	0.05	0.10	1693	16.26	Monoterp. ester
β -Caryophyllene	20.50	1403	2.27	2.36	1525	9.24	Sesquiterpene

α -Humulene	23.21	1435	0.09	0.10	1581	11.26	Sesquiterpene
Bicyclogermacrene	26.68	1477	1.13	1.15	1645	13.80	Sesquiterpene
δ -Cadinene	29.11	1507	0.03	[0.40]	1671	15.13*	Sesquiterpene
Caryophyllene oxide	33.61*	1570	0.12	0.06	1851	26.11	Sesquiterp. ether
Spathulenol	33.61*	1570	[0.12]	0.05	2025	36.33	Sesquiterp. alcohol
γ -Eudesmol	36.78	1625	0.03	0.03	2074	38.12	Sesquiterp. alcohol
Total identified			99.11%	99.02%			

*: 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

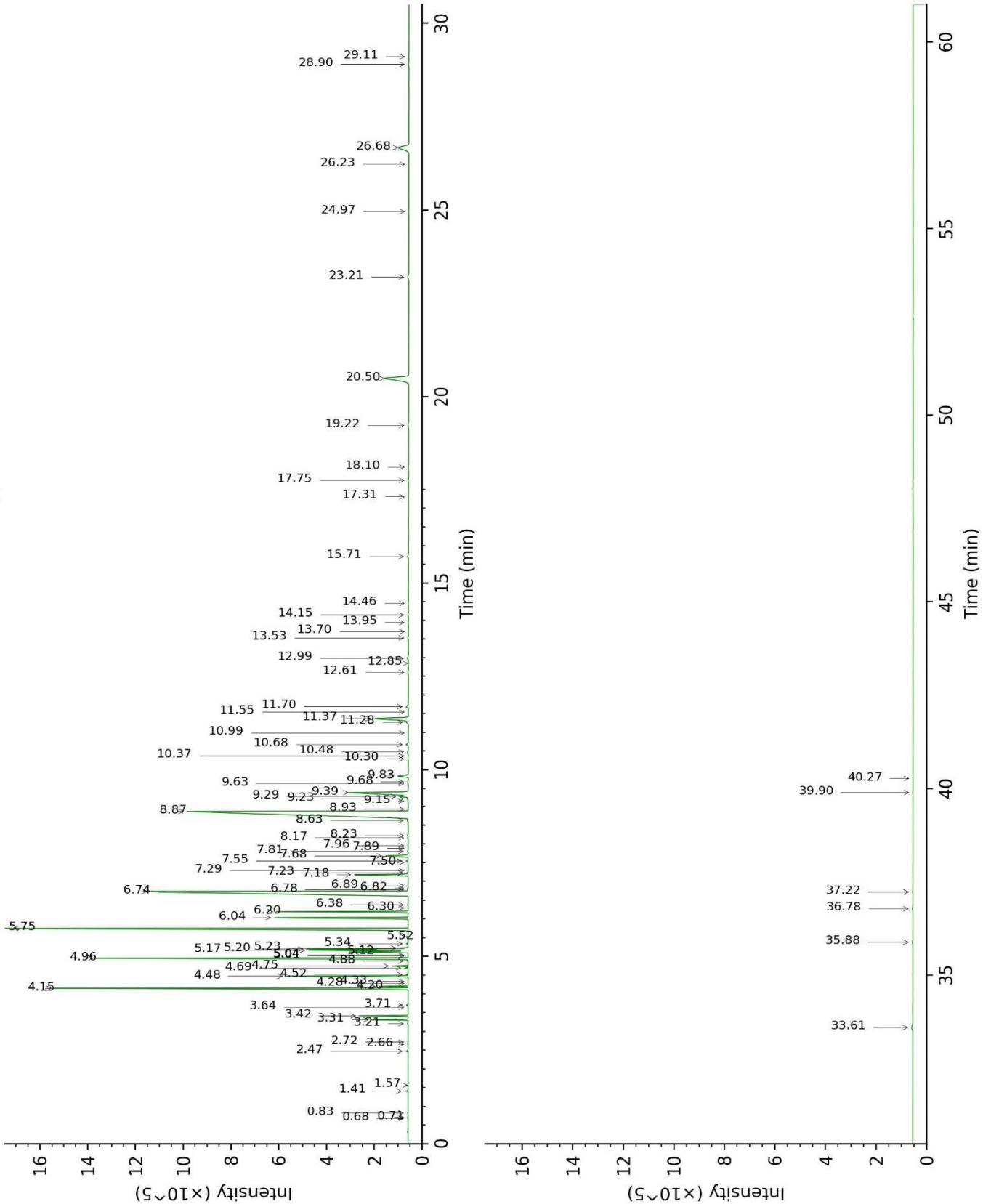
Physical aspect : Clear liquid

Refractive index : 1.4720 ± 0.0003 (20 °C)

CONCLUSION

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

17E19-PTH14-1-DM_BP5



17E19-PTH14-1-DM_WAX

