

Thyme Essential Oil

ESSENTIAL OIL ANALYSIS

Laboratoire
PhytoChemia





Date : May 9, 2017

SAMPLE IDENTIFICATION

Internal code : 17E05-FSE11-1-DM

Customer identification : Thyme Leaves + Flowers - Lot #MP16L88

Type : Essential oil

Source : *Thymus vulgaris*

Customer : Flowers Shining Everywhere Inc.



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 : 2017-05-09

Checked and approved by :



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



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IDENTIFIED COMPOUNDS

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Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
<i>cis</i> -Hex-3-en-1-ol	2.49	866	0.01	0.01	1336	5.54	Aliphatic alcohol
Tricyclene	3.23	918	0.02	0.02	921	1.01	Monoterpene
α -Thujene	3.31	923	1.07	1.05	956	1.15	Monoterpene
α -Pinene	3.42	929	0.73	0.70	945	1.11	Monoterpene
Camphene	3.70*	946	0.29	0.27	1001	1.38	Monoterpene
α -Fenchene	3.70*	946	[0.29]	0.01	995	1.33	Monoterpene
Thuja-2,4(10)-diene	3.79	951	0.01	0.01	1063	1.97*	Monoterpene
Sabinene	4.13	971	0.01	[0.01]	1063	1.97*	Monoterpene
β -Pinene	4.19	975	0.16	0.14	1039	1.73	Monoterpene
Myrcene	4.48*	992	1.83	1.70	1117	2.46*	Monoterpene
Octen-3-ol	4.48*	992	[1.83]	0.06	1396	6.49	Aliphatic alcohol
Octan-3-one	4.52	994	0.04	20.11	1213	3.72*	Aliphatic ketone
α -Phellandrene	4.75*	1007	0.26	0.16	1110	2.37	Monoterpene
Octan-3-ol	4.75*	1007	[0.26]	0.02	1346	5.68	Aliphatic alcohol
Δ^3 -Carene	4.75*	1007	[0.26]	0.07	1082	2.19	Monoterpene
α -Terpinene	4.94	1018	1.32	1.31	1124	2.55	Monoterpene
meta-Cymene	5.03	1023	0.11	[1.70]	1117	2.46*	Monoterpene
para-Cymene	5.17	1030	20.17	[20.11]	1213	3.72*	Monoterpene
Limonene	5.19	1031	0.37	0.38	1141	2.77	Monoterpene
β -Phellandrene	5.21	1033	0.16	0.26	1147	2.84*	Monoterpene
1,8-Cineole	5.24	1034	0.09	[0.26]	1147	2.84*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.34	1040	0.01	9.56	1193	3.44*	Monoterpene
<i>trans</i> - β -Ocimene	5.52	1050	0.09	0.05	1200	3.53	Monoterpene
γ -Terpinene	5.74	1062	9.77	[9.56]	1193	3.44*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	5.97	1074	0.03	0.03	1376	6.16	Monoterp. alcohol
<i>cis</i> -Sabinene hydrate	6.01	1076	0.30	0.36	1406	6.63*	Monoterp. alcohol
Terpinolene	6.18	1086	0.12	0.10	1224	3.87	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.29	1091	0.04	[0.36]	1406	6.63*	Monoterp. alcohol
para-Cymenene	6.38	1096	0.04	0.04	1366	6.02	Monoterpene
Linalool	6.67*	1108	5.18	5.10	1494	8.66*	Monoterp. alcohol
<i>trans</i> -Sabinene hydrate	6.67*	1108	[5.18]	0.10	1479	8.29	Monoterp. alcohol
<i>cis</i> -para-Menth-2-en-1-ol	7.15	1126	0.03	[5.10]	1494	8.66*	Monoterp. alcohol
<i>trans</i> -Pinocarveol	7.48	1138	0.03	0.02	1566	10.96	Monoterp. alcohol
<i>trans</i> -para-Menth-2-en-1-ol	7.66	1144	0.02	0.02	1558	10.70	Monoterp. alcohol
Camphor	7.73	1147	0.02	0.02	1424	6.99	Monoterp. ketone
Borneol	8.50	1175	0.96	0.99	1619	12.94*	Monoterp. alcohol
Terpinen-4-ol	8.70	1183	0.66	0.75	1529	9.62*	Monoterp. alcohol
α -Terpineol	9.32	1203	0.09	0.12	1626	13.21	Monoterp. alcohol
Thymol methyl ether	10.53	1230	0.05	[0.75]	1529	9.62*	Monoterp. ether
Carvacrol methyl ether	10.86	1237	0.20	0.19	1533	9.74	Monoterp. ether
Linalyl acetate	11.50	1251	0.05	0.04	1503	8.87	Monoterp. ester

<i>trans</i> -Myrtanol	12.23	1268	0.05	0.04	1766	21.11	Monoterp. alcohol
Bornyl acetate	12.85	1282	0.02	0.02	1507	8.95	Monoterp. ester
Unknown thymol analogue	13.26	1291	0.17	0.14	2120*	39.88	Monoterp. alcohol
Thymol 	14.81	1317	49.50	50.26	2110	39.58	Monoterp. alcohol
Carvacrol	14.97	1320	2.73	2.77	2126	40.06	Monoterp. alcohol
β -Caryophyllene	20.50	1403	1.16	1.20	1521	9.33	Sesquiterpene
Aromadendrene	21.84	1419	0.06	0.07	1524	9.46	Sesquiterpene
α -Humulene	23.23	1436	0.05	0.05	1579	11.45	Sesquiterpene
Unknown thymohydroquinone analog 	25.10	1458	0.31				Monoterp. ketone
Germacrene D	25.27	1460	0.08	[0.99]	1619	12.94*	Sesquiterpene
γ -Cadinene	28.45	1498	0.03	0.03	1666	15.34	Sesquiterpene
δ -Cadinene	29.11	1507	0.08	0.07	1672	15.62	Sesquiterpene
Spathulenol	33.59*	1570	0.26	0.10	2022	36.67	Sesquiterp. alcohol
Caryophyllene oxide	33.59*	1570	[0.26]	0.19	1850	26.73	Sesquiterp. ether
Total Identified			98.84%	98.71%			

*: 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

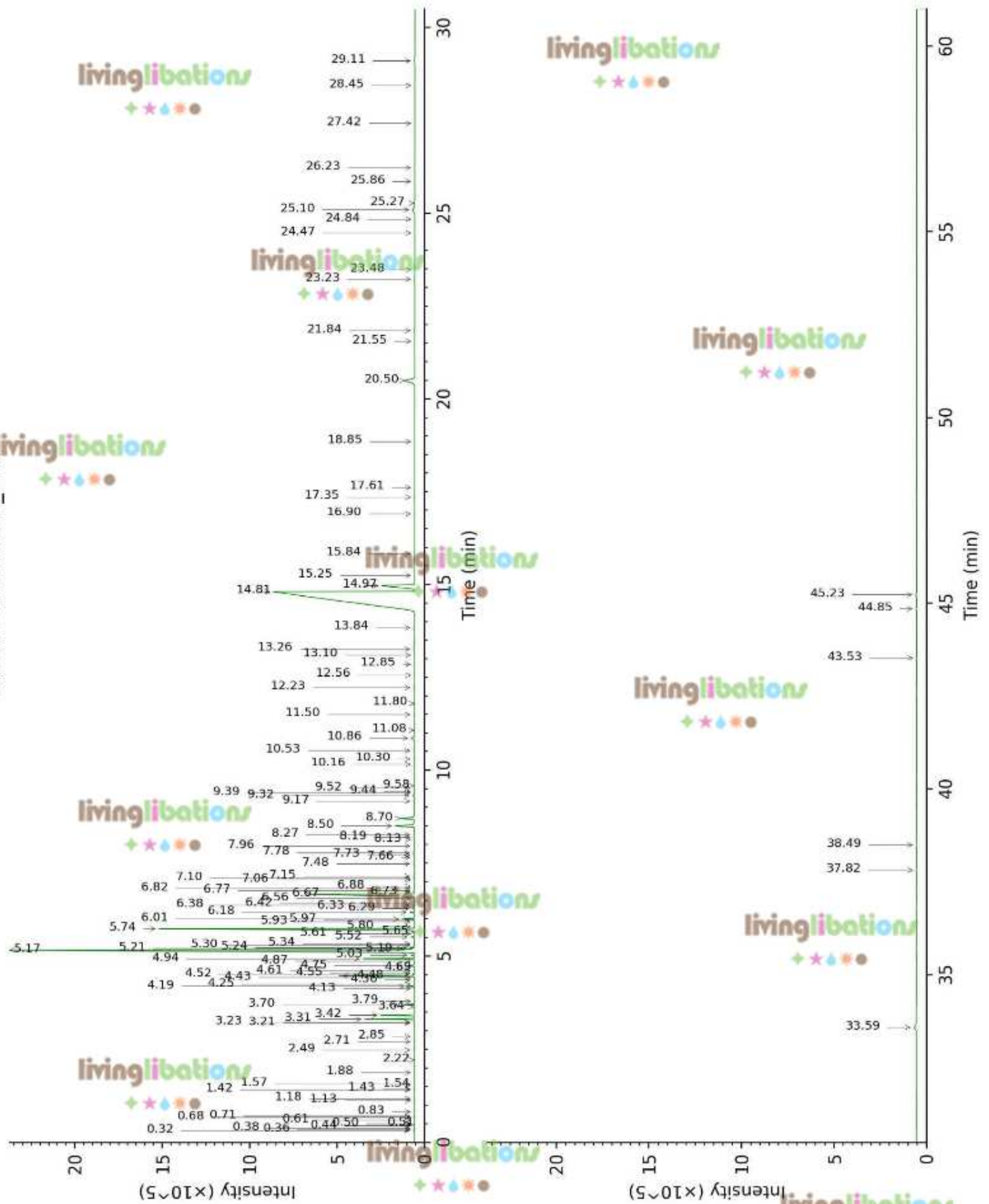
Physical aspect : Light yellow liquid

Refractive index : 1.4995 \pm 0.0003 (20 °C)

CONCLUSION

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

17E05-FSE11-1-DM_BP5



17E05-FSE11-1-DM_WAX

