

GC/MS BATCH NUMBER: T40103

ESSENTIAL OIL: THYME THYMOL
BOTANICAL NAME: THYMUS VULGARIS
ORIGIN: SPAIN

KEY CONSTITUENTS PRESENT IN THIS BATCH OF THYME THYMOL OIL	%
THYMOL	48.5
p-CYMENE	20.9
γ-TERPINENE	8.5
LINALOOL	4.9
CARVACROL	3.3
MYRCENE	1.7
α-TERPINENE	1.4
β-CARYOPHYLLENE	1.3
α-PINENE	1.0
BORNEOL	1.0
TERPINEN-4-OL	1.0
α-THUJENE	0.8
CARVACROL METHYL ETHER	0.3
cis-SABINENE HYDRATE	0.2

Comments from Robert Tisserand: A very good odor profile for the thymol chemotype of Thyme oil, and all 13 key ISO constituents conform to the ISO standard.

Date : August 9, 2016

SAMPLE IDENTIFICATION

Internal code : 16G26-PTH5-1-DM

Customer identification : Thyme - Spain - T4010364R

Type : Essential oil

Source : *Thymus vulgaris*

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 : 2016-08-09

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.	
Tricyclene	3.16	917	0.09	0.07	926	0.81	Monoterpene
α -Thujene	3.25	923	0.79	0.87	953	0.92	Monoterpene
α -Pinene	3.35	929	1.04	0.90	945	0.88	Monoterpene
Camphene	3.63*	946	1.00	0.92	1000	1.11	Monoterpene
α -Fenchene	3.63*	946	[1.00]	0.03	988	1.06	Monoterpene
Sabinene	4.06	972	0.01	0.01	1063	1.59	Monoterpene
β -Pinene	4.12	976	0.31	0.29	1038	1.40	Monoterpene
Myrcene	4.41	993	1.71	1.57	1114	2.03	Monoterpene
Octen-3-ol	4.51	1000	0.11	0.23	1407	5.94*	Aliphatic alcohol
α -Phellandrene	4.67*	1009	0.18	0.13	1107	1.96	Monoterpene
Δ 3-Carene	4.67*	1009	[0.18]	0.04	1089	1.80	Monoterpene
α -Terpinene	4.87	1019	1.39	1.40	1121	2.11	Monoterpene
para-Cymene	5.11*	1033	20.93	20.85	1212	3.18*	Monoterpene
Limonene	5.11*	1033	[20.93]	0.49	1139	2.32	Monoterpene
β -Phellandrene	5.14	1035	0.13	0.38	1144	2.38*	Monoterpene
1,8-Cineole	5.17	1036	0.24	[0.38]	1144	2.38*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.28	1042	0.01	8.31	1191	2.93*	Monoterpene
<i>trans</i> - β -Ocimene	5.46	1052	0.05	[20.85]	1212	3.18*	Monoterpene
γ -Terpinene	5.67	1064	8.48	[8.31]	1191	2.93*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	5.94	1079	0.04	0.03	1376	5.51	Monoterp. alcohol
<i>cis</i> -Sabinene hydrate	6.00	1082	0.15	[0.23]	1407	5.94*	Monoterp. alcohol
Terpinolene	6.11	1088	0.08	0.16	1223	3.33	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.25	1096	0.06	0.08	1421	6.20	Monoterp. alcohol
para-Cymenene	6.32	1100	0.04	0.04	1367	5.37	Monoterpene
Linalool	6.69	1114	4.85	4.87	1493	7.57	Monoterp. alcohol
Camphor	7.64	1150	0.25	0.27	1425	6.27	Monoterp. ketone
Borneol	8.58	1185	1.01	1.05	1617	11.09	Monoterp. alcohol
Terpinen-4-ol	8.68	1189	0.92	1.05	1528	8.38*	Monoterp. alcohol
α -Terpineol	9.34	1209	0.08	0.08	1624	11.39	Monoterp. alcohol
Thymol methyl ether	10.44*	1234	0.13	[1.05]	1528	8.38*	Monoterp. ether
Carvacrol methyl ether	10.78	1241	0.20	0.36	1530	8.43*	Monoterp. ether
Bornyl acetate	12.85	1288	0.05	0.07	1506	7.82	Monoterp. ester
Thymol	15.93	1341	48.51	49.64	2103	37.73	Monoterp. alcohol
Carvacrol	16.12	1344	3.26	3.35	2117	38.24	Monoterp. alcohol
β -Caryophyllene	20.26	1406	1.28	1.13	1524	8.24	Sesquiterpene
Aromadendrene	21.59	1423	0.05	[0.36]	1530	8.43*	Sesquiterpene
α -Humulene	22.91	1439	0.04	0.07	1583	10.06	Sesquiterpene
Caryophyllene oxide	33.45	1574	0.24	0.17	1847	23.51	Sesquiterp. ether

Spathulenol	33.68	1577	0.05	0.05	2016	34.44	Sesquiterp. alcohol
Total identified			97.76%	98.96%			

*: 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 : Yellow liquid

Refractive index : 1.5000 ± 0.0003 (20 °C)

CONCLUSION

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



