



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: T40105

ESSENTIAL OIL: THYME
BOTANICAL NAME: THYMUS VULGARIS
ORIGIN: FRANCE

| KEY CONSTITUENTS PRESENT IN THIS BATCH OF THYME OIL | % |
|---|------|
| THYMOL | 48.3 |
| p-CYMENE | 20.9 |
| γ-TERPINENE | 9.4 |
| LINALOOL | 4.5 |
| CARVACROL | 2.4 |
| MYRCENE | 1.7 |
| α-TERPINENE | 1.5 |
| β-CARYOPHYLLENE | 1.4 |
| α-PINENE | 1.2 |
| α-THUJENE | 1.1 |

Comments from Robert Tisserand: Excellent herbaceous, spicy odor profile. All thirteen key ISO constituents are within range.

Date : May 8, 2017

SAMPLE IDENTIFICATION

Internal code : 17E04-PTH1-1-DM

Customer identification : Thyme Thymol - France - T4010567R

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 : 2017-05-08

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 | 2.49 | 866 | 0.01 | 0.01 | 1336 | 5.54 | Aliphatic alcohol |
| Tricyclene | 3.22 | 917 | 0.05 | 0.04 | 920 | 1.01 | Monoterpene |
| α -Thujene | 3.31 | 922 | 1.10 | 1.09 | 955 | 1.15 | Monoterpene |
| α -Pinene | 3.41 | 928 | 1.21 | 1.15 | 944 | 1.10 | Monoterpene |
| Camphene | 3.69* | 945 | 0.57 | 0.53 | 1000 | 1.38 | Monoterpene |
| α -Fenchene | 3.69* | 945 | [0.57] | 0.01 | 994 | 1.32 | Monoterpene |
| Thuja-2,4(10)-diene | 3.79 | 951 | 0.01 | 0.02 | 1062 | 1.97* | Monoterpene |
| Sabinene | 4.12 | 971 | 0.01 | [0.02] | 1062 | 1.97* | Monoterpene |
| β -Pinene | 4.18 | 974 | 0.42 | 0.39 | 1039 | 1.72 | Monoterpene |
| Myrcene | 4.47* | 991 | 1.87 | 1.73 | 1116 | 2.45* | Monoterpene |
| Octen-3-ol | 4.47* | 991 | [1.87] | 0.06 | 1396 | 6.48 | Aliphatic alcohol |
| Octan-3-one | 4.51 | 994 | 0.05 | 0.05 | 1199 | 3.53* | Aliphatic ketone |
| α -Phellandrene | 4.74* | 1007 | 0.24 | 0.17 | 1110 | 2.36 | Monoterpene |
| Δ^3 -Carene | 4.74* | 1007 | [0.24] | 0.05 | 1081 | 2.18 | Monoterpene |
| α -Terpinene | 4.93 | 1017 | 1.46 | 1.43 | 1124 | 2.54 | Monoterpene |
| meta-Cymene | 5.02 | 1022 | 0.13 | [1.73] | 1116 | 2.45* | Monoterpene |
| para-Cymene | 5.16 | 1030 | 20.94 | 20.83 | 1213 | 3.72 | Monoterpene |
| Limonene | 5.18 | 1031 | 0.45 | 0.46 | 1140 | 2.76 | Monoterpene |
| β -Phellandrene | 5.20 | 1032 | 0.14 | 0.31 | 1146 | 2.83* | Monoterpene |
| 1,8-Cineole | 5.23 | 1034 | 0.16 | [0.31] | 1146 | 2.83* | Monoterp. ether |
| <i>cis</i> - β -Ocimene | 5.33 | 1039 | 0.01 | 9.22 | 1192 | 3.43* | Monoterpene |
| <i>trans</i> - β -Ocimene | 5.51 | 1049 | 0.06 | [0.05] | 1199 | 3.53* | Monoterpene |
| γ -Terpinene | 5.73 | 1061 | 9.43 | [9.22] | 1192 | 3.43* | Monoterpene |
| <i>cis</i> -Linalool oxide (fur.) | 5.97 | 1074 | 0.03 | 0.02 | 1375 | 6.15 | Monoterp. alcohol |
| <i>cis</i> -Sabinene hydrate | 6.00 | 1076 | 0.26 | 0.31 | 1404 | 6.62* | Monoterp. alcohol |
| Terpinolene | 6.17 | 1085 | 0.09 | 0.08 | 1224 | 3.86 | Monoterpene |
| <i>trans</i> -Linalool oxide (fur.) | 6.28 | 1091 | 0.05 | [0.31] | 1404 | 6.62* | Monoterp. alcohol |
| para-Cymenene | 6.36 | 1096 | 0.04 | 0.04 | 1366 | 6.01 | Monoterpene |
| Linalool | 6.65* | 1108 | 4.63 | 4.54 | 1493 | 8.65 | Monoterp. alcohol |
| <i>trans</i> -Sabinene hydrate | 6.65* | 1108 | [4.63] | 0.04 | 1487 | 8.49 | Monoterp. alcohol |
| <i>trans</i> -Pinocarveol | 7.47 | 1138 | 0.03 | 0.03 | 1569 | 11.09 | Monoterp. alcohol |
| Camphor | 7.70 | 1146 | 0.09 | 0.09 | 1424 | 6.98 | Monoterp. ketone |
| Borneol | 8.49 | 1175 | 0.99 | 1.01 | 1618 | 12.92 | Monoterp. alcohol |
| Terpinen-4-ol | 8.69 | 1182 | 0.89 | 0.95 | 1528 | 9.61* | Monoterp. alcohol |
| α -Terpineol | 9.29 | 1203 | 0.09 | 0.15 | 1626 | 13.20* | Monoterp. alcohol |
| γ -Terpineol | 9.50 | 1207 | 0.07 | [0.15] | 1626 | 13.20* | Monoterp. alcohol |
| Thymol methyl ether | 10.51 | 1230 | 0.05 | [0.95] | 1528 | 9.61* | Monoterp. ether |
| Carvacrol methyl ether | 10.84 | 1237 | 0.20 | 0.22 | 1532 | 9.73 | Monoterp. ether |
| Unknown thymol analogue | 13.26 | 1291 | 0.13 | 0.14 | 2119 | 39.88 | Monoterp. alcohol |
| Thymol | 14.76 | 1316 | 48.31 | 48.75 | 2110 | 39.57 | Monoterp. alcohol |
| Carvacrol | 14.92 | 1319 | 2.43 | 2.48 | 2126 | 40.05 | Monoterp. alcohol |

| | | | | | | | |
|--|--------|------|---------------|---------------|------|-------|---------------------|
| β-Caryophyllene | 20.47 | 1402 | 1.36 | 1.40 | 1521 | 9.31 | Sesquiterpene |
| Aromadendrene | 21.81 | 1418 | 0.06 | 0.07 | 1524 | 9.45 | Sesquiterpene |
| α-Humulene | 23.19 | 1435 | 0.05 | 0.04 | 1578 | 11.42 | Sesquiterpene |
| Unknown thymohydroquinone analog | 25.03 | 1457 | 0.25 | | | | Monoterp. alcohol |
| γ-Muurolene | 25.24 | 1460 | 0.07 | 0.07 | 1613 | 12.70 | Sesquiterpene |
| γ-Cadinene | 28.41 | 1498 | 0.03 | 0.04 | 1666 | 15.30 | Sesquiterpene |
| δ-Cadinene | 29.07 | 1507 | 0.06 | 0.07 | 1671 | 15.58 | Sesquiterpene |
| Spathulenol | 33.56* | 1569 | 0.32 | 0.09 | 2022 | 36.66 | Sesquiterp. alcohol |
| Caryophyllene oxide | 33.56* | 1569 | [0.32] | 0.21 | 1850 | 26.68 | Sesquiterp. ether |
| Total identified | | | 98.90% | 98.39% | | | |

*: 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

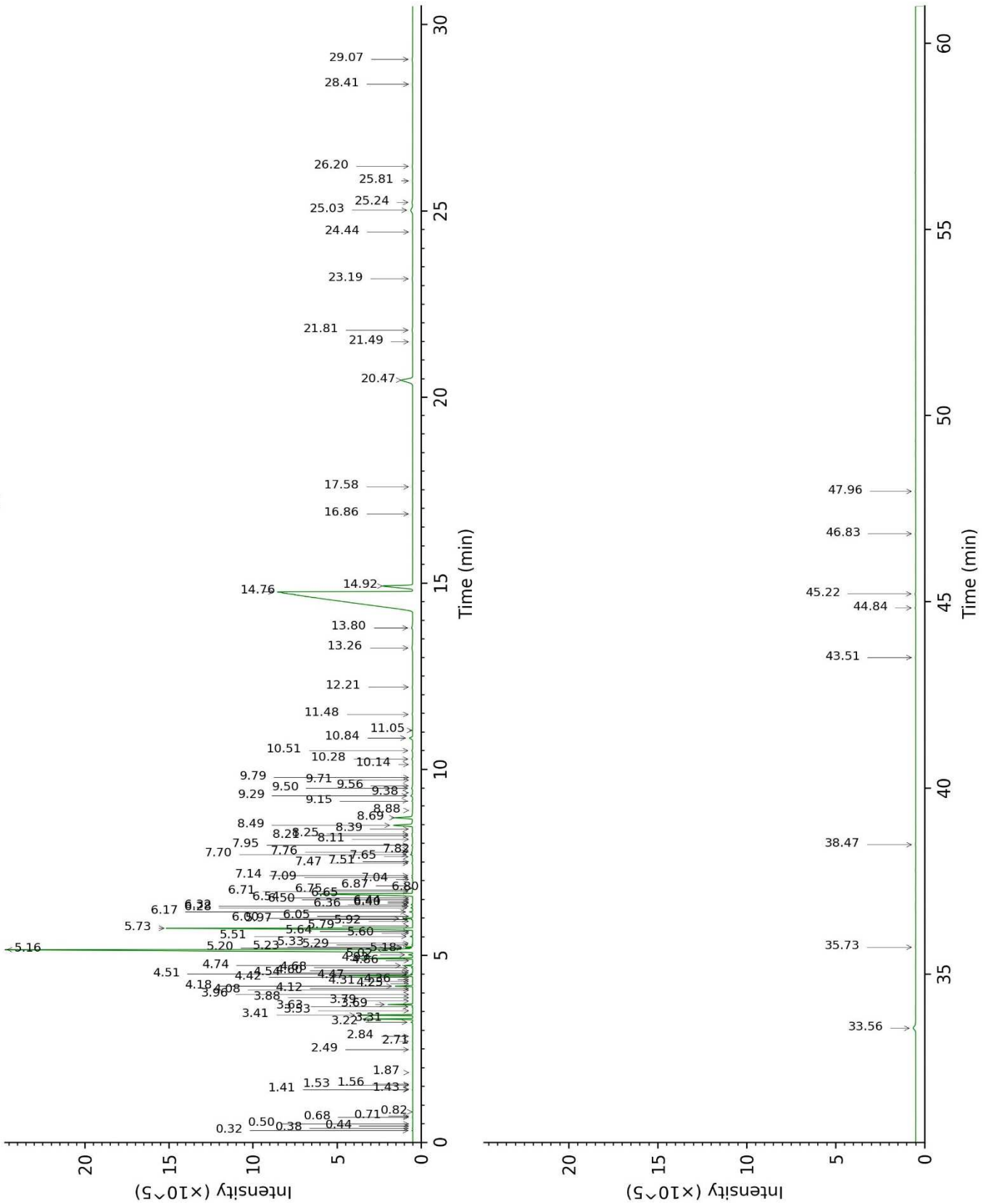
Physical aspect : Yellow liquid

Refractive index : 1.4980 ± 0.0003 (20 °C)

CONCLUSION

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

17E04-PTH1-1-DM_BP5



17E04-PTH1-1-DM_WAX

