

## GC-MS Profiling Analysis Prepared for Jade Bloom, Inc

**Date:** February 26, 2018

**Sample:** Thyme White

**Type:** Essential Oil

**Source:** *Thymus vulgaris* ct. *Thymol*

**Batch:** 7845

### ANALYSIS SUMMARY

Identification	DB-5 (%)	DB-WAX (%)	Classe
Isobutyral	tr	0.01	Aliphatic aldehyde
Acetic acid	tr	tr	Aliphatic acid
2-Methyl-3-buten-2-ol	tr	tr	Aliphatic alcohol
Isovaleral	0.01	0.01	Aliphatic aldehyde
2-Methylbutyral	0.01	0.01	Aliphatic aldehyde
2-Ethylfuran	tr	tr	Furan
Isoamyl alcohol	tr	tr*	Aliphatic alcohol
2-Methylbutanol	tr	[tr]*	Aliphatic alcohol
Methyl 2-methylbutyrate	0.01	0.01	Aliphatic ester
Hexanal	tr	0.01	Aliphatic aldehyde
(3Z)-Hexenol	0.01	0.01	Aliphatic alcohol
Hexanol	0.01	0.02	Aliphatic alcohol
Heptan-3-one	0.01	0.01	Aliphatic ketone
Hashishene	0.01	0.81*	Monoterpene
Tricyclene	0.04	0.04	Monoterpene
$\alpha$ -Thujene	0.87	0.88	Monoterpene
$\alpha$ -Pinene	0.79	[0.81]*	Monoterpene
Camphene	0.74*	0.71	Monoterpene
$\alpha$ -Fenchene	[0.74]*	0.02	Monoterpene
Thuja-2,4(10)-diene	0.01	0.02*	Monoterpene
$\beta$ -Pinene	0.50*	0.51	Monoterpene
Sabinene	[0.50]*	[0.02]*	Monoterpene
Octen-3-ol	0.06	0.06	Aliphatic alcohol
Octan-3-one	0.10	0.11	Aliphatic ketone
Myrcene	1.49	1.48	Monoterpene
$\alpha$ -Phellandrene	0.18*	0.14	Monoterpene
Octan-3-ol	[0.18]*	0.04	Aliphatic alcohol
$\Delta^3$ -Carene	0.08	0.08	Monoterpene
$\alpha$ -Terpinene	1.09	1.11	Monoterpene
para-Cymene	17.28	17.51	Monoterpene
Limonene	0.86*	0.35	Monoterpene
1,8-Cineole	[0.86]*	0.30*	Monoterpenic ether
$\beta$ -Phellandrene	[0.86]*	[0.30]*	Monoterpene
Cymene analog	0.02*		Monoterpene
(Z)- $\beta$ -Ocimene	[0.02]*	8.81*	Monoterpene
(E)- $\beta$ -Ocimene	0.04	0.03	Monoterpene
$\gamma$ -Terpinene	8.80	[8.81]*	Monoterpene
cis-Sabinene hydrate	0.22	0.28*	Monoterpenic alcohol
cis-Linalool oxide (fur.)	0.03	0.03	Monoterpenic alcohol
Amyl butyrate	0.01		Aliphatic ester
Terpinolene	0.11	0.12	Monoterpene
para-Cymenene	0.11*	0.07	Monoterpene
trans-Linalool oxide (fur.)	[0.11]*	[0.28]*	Monoterpenic alcohol
trans-Sabinene hydrate	0.08	0.09	Monoterpenic alcohol
Linalool	3.69	3.66	Monoterpenic alcohol
Nonanal	[3.69]	0.02	Aliphatic aldehyde
Hotrienol	0.02	0.02	Monoterpenic alcohol
endo-Fenchol	0.01	0.01	Monoterpenic alcohol

Unknown	0.06	0.05	Unknown
<i>trans</i> -Pinocarveol	0.04	0.01	Monoterpenic alcohol
Camphor	0.58	0.58	Monoterpenic ketone
<i>trans</i> -para-Menth-2-en-1-ol	[0.58]	0.02	Monoterpenic alcohol
Camphene hydrate	0.05	0.06	Monoterpenic alcohol
Borneol	0.96	1.02*	Monoterpenic alcohol
Terpinen-4-ol	0.97	1.06*	Monoterpenic alcohol
para-Cymen-8-ol	0.03	0.07*	Monoterpenic alcohol
$\alpha$ -Terpineol	0.16	[1.02]*	Monoterpenic alcohol
<i>cis</i> -Dihydrocarvone	0.05	0.20*	Monoterpenic ketone
Bornyl formate	0.04		Monoterpenic ester
Thymol methyl ether	0.02	1.30*	Monoterpenic ether
Neral	0.04	0.03	Monoterpenic aldehyde
Carvacrol methyl ether	0.26	[0.20]*	Monoterpenic ether
Geraniol	0.07	0.06	Monoterpenic alcohol
Thymol analogue I	0.12	0.14	Monoterpenic alcohol
Thymol	50.95*	50.83	Monoterpenic alcohol
Thymol analogue II	[50.95]*	0.21	Monoterpenic alcohol
Carvacrol	4.21	3.95	Monoterpenic alcohol
Thymyl acetate	0.06	[0.07]*	Monoterpenic ester
Eugenol	0.09	0.21	Phenylpropanoid
$\alpha$ -Copaene	0.03	0.02	Sesquiterpene
$\beta$ -Bourbonene	0.01	0.01	Sesquiterpene
Geranyl acetate	0.02	0.02	Monoterpenic ester
Isocaryophyllene	0.02	0.02	Sesquiterpene
$\beta$ -Caryophyllene	1.32	[1.30]*	Sesquiterpene
Aromadendrene	0.08	[1.06]*	Sesquiterpene
$\alpha$ -Humulene	0.04	0.04	Sesquiterpene
Unknown	0.04		Oxygenated monoterpene
Thymohydroquinone isomer?	0.51		Simple phenolic
$\gamma$ -Muurolene	0.03	0.07*	Sesquiterpene
Viridiflorene	0.05	[0.07]*	Sesquiterpene
$\alpha$ -Muurolene	0.02	0.02	Sesquiterpene
$\gamma$ -Cadinene	0.04	0.05	Sesquiterpene
$\delta$ -Cadinene	0.09	0.09	Sesquiterpene
<i>trans</i> -Cadina-1,4-diene	0.01	0.01	Sesquiterpene
$\alpha$ -Cadinene	0.01	0.01	Sesquiterpene
Spathulenol	0.06	0.07	Sesquiterpenic alcohol
Caryophyllene oxide isomer	0.20*	0.01	Sesquiterpenic ether
Caryophyllene oxide	[0.20]*	0.18	Sesquiterpenic ether
Unknown	0.03		Oxygenated sesquiterpene
Humulene epoxide II	0.02	0.04	Sesquiterpenic ether
$\tau$ -Cadinol	0.02	0.01	Sesquiterpenic alcohol
Unknown	0.06		Unknown
<b>Total identified</b>	<b>98.57%</b>	<b>97.86%</b>	

\*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

*PHYSICOCHEMICAL DATA*

**Physical aspect:** Light yellow liquid

**Refractive index:**  $1.5013 \pm 0.0003$  (20 °C)

*CONCLUSION*

No adulterant, contaminant or diluent has been detected using this method.

