

GC/MS BATCH NUMBER: EG0101

ESSENTIAL OIL: EUCALYPTUS DIVES
BOTANICAL NAME: EUCALYPTUS DIVES
ORIGIN:

KEY CONSTITUENTS PRESENT IN THIS BATCH OF EUCALYPTUS DIVES OIL	%
PIPERITONE	51.0
α -PHELLANDRENE	19.9
p-CYMENE	5.5
TERPINEN-4-OL	4.8
α -THUJENE	2.9
TERPINOLENE	2.1
β -PHELLANDRENE	1.9
MYRCENE	1.5
α -TERPINENE	1.1
LINALOOL	1.1

Comments from Robert Tisserand: A fresh, clean, mint-eucalyptus odor quality. Constituents are in expected amounts.

Date : January 22, 2018

SAMPLE IDENTIFICATION

Internal code : 18A19-PTH2-1-CC

Customer identification : Eucalyptus Peppermint - Australia - EG0101512R

Type : Essential oil

Source : *Eucalyptus dives*

Customer : Plant Therapy

ANALYSIS

Method : PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

Identifications double-checked by GC-MS

Analyst : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2018-01-22

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.	
Toluene	1.32	759	0.02	0.35	936	1.01*	Simple phenolic
α -Thujene	3.32	920	2.92	2.91	951	1.06	Monoterpene
α -Pinene	3.42	926	0.35	[0.35]	936	1.01*	Monoterpene
Sabinene	4.14	969	0.18	0.18	1054	1.74	Monoterpene
β -Pinene	4.21	973	0.05	0.05	1034	1.59	Monoterpene
Myrcene	4.49	989	1.47	1.47	1112	2.30	Monoterpene
α -Phellandrene	4.81*	1008	20.00	19.92	1108	2.25	Monoterpene
Δ 3-Carene	4.81*	1008	[20.00]	tr	1087	2.01	Monoterpene
α -Terpinene	4.96	1015	1.06	1.05	1117	2.36	Monoterpene
para-Cymene	5.17	1027	5.52	5.44	1206	3.47	Monoterpene
Limonene	5.20	1028	0.36	0.43	1134	2.57	Monoterpene
β -Phellandrene	5.23	1030	1.91	2.67	1141	2.66*	Monoterpene
1,8-Cineole	5.24	1031	0.76	[2.67]	1141	2.66*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.36	1037	0.05	0.75	1179	3.16*	Monoterpene
<i>trans</i> - β -Ocimene	5.54	1047	0.38	0.38	1198	3.35	Monoterpene
γ -Terpinene	5.74	1058	0.71	[0.75]	1179	3.16*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	6.01	1072	0.02	0.01	1377	5.98	Monoterp. alcohol
<i>cis</i> -Sabinene hydrate	6.08	1076	0.01	0.02	1402	6.42*	Monoterp. alcohol
Terpinolene	6.22	1084	2.08	2.07	1219	3.65	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.33	1090	0.01	[0.02]	1402	6.42*	Monoterp. alcohol
para-Cymenene	6.44	1096	0.04	0.03	1363	5.77	Monoterpene
Linalool	6.72	1107	1.05	1.72	1494	8.32*	Monoterp. alcohol
<i>cis</i> -para-Menth-2-en-1-ol	7.25	1126	0.66	[1.72]	1494	8.32*	Monoterp. alcohol
<i>trans</i> -para-Menth-2-en-1-ol	7.77	1144	0.47	0.46	1553	10.20	Monoterp. alcohol
Unknown (m/z = 95, 110 (41), 81 (21), 67 (19), 41 (16)... 152 (9))	8.47	1170	0.04				Oxygenated monoterpene
Unknown (m/z = 95, 110 (47), 81 (28), 79 (16), 41 (15)... 152 (10))	8.62	1175	0.06				Oxygenated monoterpene
Terpinen-4-ol	8.89	1185	4.75	4.72	1524	9.29*	Monoterp. alcohol
para-Cymen-8-ol	9.43	1202	0.15	0.09	1762	20.51	Monoterp. alcohol
α -Terpineol	9.53	1204	0.92	52.28	1624	12.98*	Monoterp. alcohol
α -Phellandrene epoxide	9.57*	1205	0.35	0.15	1713	17.52	Monoterpene
γ -Terpineol	9.57*	1205	[0.35]	[52.28]	1624	12.98*	Monoterp. alcohol
<i>cis</i> -Piperitol	9.90	1212	0.09				Monoterp. alcohol
<i>trans</i> -Piperitol	10.13	1217	0.17	0.25	1664	14.87	Monoterp. alcohol
Neral	11.22	1241	0.04	0.04	1595	11.63	Monoterp. aldehyde
Piperitone	12.25	1264	51.04	[52.28]	1624	12.98*	Monoterp. ketone
Geranial	12.76	1275	0.05	0.05	1641	13.79	Monoterp. aldehyde
Carvacrol	16.21	1334	0.08	0.07	2111	39.50	Monoterp. alcohol

α -Terpinyl acetate	16.71	1341	0.15	0.10	1612	12.45	Monoterp. ester
α -Copaene	17.74	1357	0.01	tr	1418	6.72	Sesquiterpene
β -Elemene	18.99	1376	0.01	0.01	1516	9.02	Sesquiterpene
Methyl (<i>E</i>)-cinnamate	20.05	1391	0.03	0.04	1950	33.04	Phenylpropanoid ester
β -Caryophyllene	20.65	1400	0.07	0.08	1507	8.74	Sesquiterpene
Aromadendrene	21.95	1415	0.04	[4.72]	1524	9.29*	Sesquiterpene
allo-Aromadendrene	23.72	1436	0.07	0.06	1548	10.04	Sesquiterpene
Viridiflorene	26.52	1470	0.06	0.04	1604	12.07	Sesquiterpene
Bicyclogermacrene	26.94	1475	0.51	0.50	1630	13.25	Sesquiterpene
Spathulenol	34.07	1571	0.09	0.09	2005	35.92	Sesquiterp. alcohol
Globulol	34.42	1576	0.06	0.06	1958	33.52	Sesquiterp. alcohol
Viridiflorol	34.91	1583	0.04	0.04	1965	33.89	Sesquiterp. alcohol
β -Eudesmol	37.96	1647	0.07	0.08	2102	39.25	Sesquiterp. alcohol
Total identified			98.93%	98.66%			

*: 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

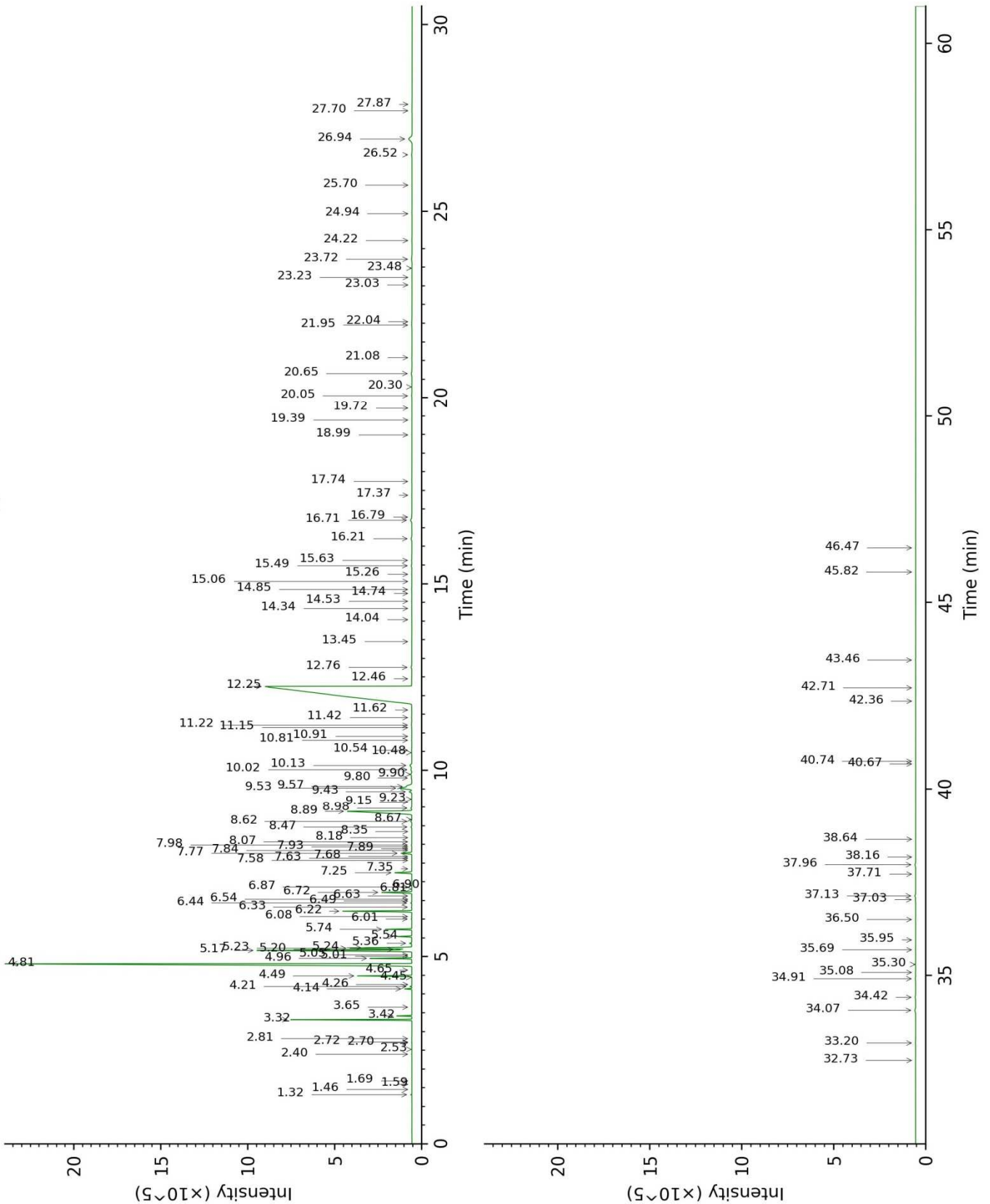
Physical aspect : Faintly yellow liquid

Refractive index : 1.4805 \pm 0.0003 (20 °C)

CONCLUSION

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

18A19-PTH2-1-CC_BP5



18A19-PTH2-1-CC_WAX

