

GC/MS BATCH NUMBER: CL0103

ESSENTIAL OIL: CYPRESS

BOTANICAL NAME: CUPRESSUS SEMPERVIRENS

ORIGIN: SPAIN

KEY CONSTITUENTS PRESENT IN THIS BATCH OF OIL	%
α -PINENE	54.0
Δ^3 -CARENE	24.3
TERPINOLENE	3.1
LIMONENE	3.1
MYRCENE	2.6
α -TERPINYL ACETATE	1.8
β -PINENE	1.4
TERPINEN-4-OL	1.1
α -CEDROL	0.9
GERMACRENE D	0.1

Comments from Robert Tisserand: Smells great, and conforms to the AFNOR standard for all 9 key constituents except for one, germacrene D, which is slightly low. This is not a concern.

Date : May 17, 2016

SAMPLE IDENTIFICATION

Internal code : 16D25-PTH3-1-SM

Customer identification : Cypress - Spain - CL010361

Type : Essential oil

Source : *Cupressus sempervirens*

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 : 2016-05-17

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.	
Cyclofenchene	2.52	872	0.01	0.01	808	0.54	Monoterpene
ξ-Fenchene	2.87	899	0.03	0.03	905	0.72	Monoterpene
Tricyclene	3.14	916	0.07	0.07	930	0.82	Monoterpene
α-Thujene	3.23	922	0.55	0.52	964	0.96	Monoterpene
α-Pinene	3.39	932	53.97	54.05	962	0.95	Monoterpene
α-Fenchene	3.59	944	0.40	0.34	996	1.09	Monoterpene
Camphene	3.61	945	0.26	0.25	1005	1.14	Monoterpene
Sabinene	4.03	970	0.61	0.58	1060	1.57	Monoterpene
β-Pinene	4.09	974	1.41	1.36	1043	1.43	Monoterpene
Myrcene	4.37	991	2.57	2.61	1119	2.09	Monoterpene
Δ3-Carene	4.69*	1010	24.32	24.92	1101	1.90	Monoterpene
α-Phellandrene	4.69*	1010	[24.32]	0.16	1111	2.00	Monoterpene
α-Terpinene	4.82	1017	0.26	0.28	1125	2.15*	Monoterpene
meta-Cymene	4.91	1022	0.02	[0.28]	1125	2.15*	Monoterpene
para-Cymene	5.00	1027	0.38	0.43	1211	3.17	Monoterpene
Limonene	5.05	1030	3.10	3.06	1143	2.37	Monoterpene
β-Phellandrene	5.08	1031	0.20	0.72	1148	2.43*	Monoterpene
1,8-Cineole	5.12	1033	0.33	[0.72]	1148	2.43*	Monoterp. ether
trans-β-Ocimene	5.40	1049	0.02	0.01	1206	3.09	Monoterpene
γ-Terpinene	5.59	1059	0.73	0.72	1191	2.92	Monoterpene
Isoterpinolene	5.98	1081	0.06	0.04	1222	3.31	Monoterpene
Terpinolene	6.06	1086	3.14	3.12	1227	3.39	Monoterpene
para-Cymenene	6.23	1095	0.06	0.06	1372	5.44	Monoterpene
α-Pinene oxide	6.37	1103	0.02	0.01	1302	4.43	Monoterp. ether
Linalool	6.47	1106	0.49	0.58	1500	7.69	Monoterp. alcohol
Camphor	7.55	1147	0.03	0.02	1425	6.28	Monoterp. ketone
Karahanaenone	7.78	1155	0.11	0.21	1438	6.51*	Monoterp. ketone
Borneol	8.25	1173	0.22	0.19	1623	11.37	Monoterp. alcohol
Terpinen-4-ol	8.47	1181	1.05	1.18	1533	8.53*	Monoterp. alcohol
α-Terpineol	9.04	1202	0.42	0.41	1629	11.63	Monoterp. alcohol
Bornyl acetate	12.53	1281	0.18	0.17	1508	7.85	Monoterp. ester
trans-Pinocarvyl acetate	13.08	1293	0.10	[1.18]	1533	8.53*	Monoterp. ester
α-Longipinene	14.87	1325	0.02	0.03	1399	5.83	Sesquiterpene
trans-β-Terpinyl acetate	15.32	1331	0.12	0.11	1607	10.80	Monoterp. ester
α-Cubebene	15.50	1334	0.05	0.04	1414	6.05	Sesquiterpene
α-Terpinyl acetate	16.13	1344	1.84	1.74	1621	11.27	Monoterp. ester
α-Copaene	17.15	1360	0.11	[0.21]	1438	6.51*	Sesquiterpene
α-Cedrene	19.57	1397	0.23	0.13	1497	7.63	Sesquiterpene
β-Caryophyllene	19.93	1402	0.26	0.25	1525	8.29	Sesquiterpene
β-Cedrene	20.08	1404	0.06	0.04	1520	8.14	Sesquiterpene

α -Humulene	22.63	1435	0.09	0.08	1585	10.11	Sesquiterpene
Germacrene D	24.66	1460	0.10	0.10	1616	11.04	Sesquiterpene
δ -Cadinene	28.44	1506	0.19	0.15	1676	13.74	Sesquiterpene
α -Cedrol	34.62	1590	0.91	0.92	1994	33.16	Sesquiterp. alcohol
Isopimaradiene?	46.57	1942	0.02				Diterpene
Manoyl oxide	47.23	1959	tr				Diterp. ether
Total identified			99.12%	99.70%			

*: 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 : Clear liquid

Refractive index : 1.4695 ± 0.0003 (20 °C)

CONCLUSION

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



