

GC/MS BATCH NUMBER: CL0102

ESSENTIAL OIL: CYPRESS

BOTANICAL NAME: CUPRESSUS SEMPERVIRENS

ORIGIN: SPAIN

KEY CONSTITUENTS PRESENT IN THIS BATCH OF CYPRESS OIL	%
α -PINENE	52.7
Δ^3 -CARENE	24.0
LIMONENE	3.1
TERPINOLENE	2.9
MYRCENE	2.4
α -TERPINYL ACETATE	1.6
α -CEDROL	1.6
TERPINEN-4-OL	1.2
β -PINENE	1.1

Comments from Robert Tisserand: An excellent, green/fresh cypress oil with a very good composition.

Date : October 7, 2015

SAMPLE IDENTIFICATION

Internal code : 15I28-PTH5-1-HM

Customer identification : Cypress - Spain - CL010258

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 : Alexis St-Gelais, M. Sc.

Analysis date : 2015-09-29

IDENTIFIED COMPOUNDS

Identification	Colonne: BP5			Colonne: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
ξ-Fenchene	2.37	897	0.05	0.05	936	0.84	Monoterpene
Tricyclene	2.62	914	0.19	0.19	964	0.97	Monoterpene
α-Thujene	2.72	920	0.58	0.74	1001	1.14	Monoterpene
α-Pinene	2.87	930	52.65	52.15	998	1.12	Monoterpene
α-Fenchene	3.04	941	0.55	0.59	1018	1.30	Monoterpene
Camphene	3.06	942	0.35	0.35	1025	1.35	Monoterpene
Thuja-2,4(10)-diene	3.15	948	0.02	0.68	1083	1.87*	Monoterpene
Sabinene	3.47	968	0.73	[0.68]	1083	1.87*	Monoterpene
β-Pinene	3.51	971	1.07	1.09	1064	1.70	Monoterpene
Myrcene	3.82	990	2.35	2.40	1136	2.47	Monoterpene
Δ3-Carene	4.11*	1008	24.09	24.09	1116	2.22	Monoterpene
α-Phellandrene	4.11*	1008	[24.09]	0.08	1126	2.35	Monoterpene
α-Terpinene	4.24	1015	0.38	0.44	1140	2.52	Monoterpene
Limonene	4.46*	1028	3.71	3.07	1159	2.75	Monoterpene
para-Cymene	4.46*	1028	[3.71]	0.55	1228	3.67	Monoterpene
β-Phellandrene	4.46*	1028	[3.71]	0.27	1164	2.82	Monoterpene
cis-β-Ocimene	4.65	1039	0.01	0.65	1206	3.36*	Monoterpene
trans-β-Ocimene	4.82	1048	0.03	0.03	1220	3.56	Monoterpene
γ-Terpinene	4.98	1058	0.67	[0.65]	1206	3.36*	Monoterpene
Isoterpinolene	5.36	1079	0.10	0.09	1236	3.79	Monoterpene
Terpinolene	5.44	1084	2.87	2.82	1241	3.87	Monoterpene
Fenchone	5.55	1090	0.01	0.01	1346	5.41	Monoterp. ketone
para-Cymenene	5.63	1095	0.06	0.07	1390	6.07	Monoterpene
α-Pinene oxide	5.69	1098	0.02	0.03	1318	4.99	Monoterp. ether
Linalool	5.89	1108	0.39	0.40	1516	8.81	Monoterp. alcohol
endo-Fenchol	6.19	1121	0.01	0.12	1529	9.24*	Monoterp. alcohol
α-Campholenal	6.26	1125	0.01				Monoterp. aldehyde
trans-Pinocarveol	6.57	1139	0.09	0.10	1595	11.41	Monoterp. alcohol
Camphor	6.72	1146	0.01	0.02	1440	7.06	Monoterp. ketone
Karahanaenone?	6.87	1153	0.25				Monoterp. ketone
Borneol	7.35	1174	0.79	0.85	1636	13.26	Monoterp. alcohol
Terpinen-4-ol	7.50	1182	1.17	1.44	1545	9.77*	Monoterp. alcohol
α-Terpineol	8.02	1203	0.20	0.25	1640	13.47	Monoterp. alcohol
γ-Terpineol	8.20	1208	0.05	0.02	1650	13.94	Monoterp. alcohol
Eucarvone	8.40	1213	0.01				Monoterp. ketone
Carvacrol methyl ether	9.36*	1239	0.05	0.02	1557	10.17	Monoterp. ether
exo-2-Hydroxycineole	9.36*	1239	[0.05]	0.03	1801	22.61	Monoterp. alcohol
Bornyl acetate	10.79	1278	0.82	0.91	1521	8.97*	Monoterp. ester
trans-Pinocarvyl acetate	11.28	1291	0.20	[1.44]	1545	9.77*	Monoterp. ester
α-Cubebene	13.24*	1329	0.27	0.10	1416	6.56	Sesquiterpene
α-Longipinene	13.24*	1329	[0.27]	0.05	1412	6.47	Sesquiterpene

α -Terpinyl acetate	13.96	1341	1.56	1.85	1632	13.09	Monoterp. ester
α -Cedrene	16.76	1390	0.13	0.15	1504	8.43	Sesquiterpene
β -Cedrene	16.79	1391	0.11	[0.91]	1521	8.97*	Sesquiterpene
β -Caryophyllene	17.17	1397	0.14	[0.12]	1529	9.24*	Sesquiterpene
α -Humulene	19.63	1430	0.08	0.04	1600	11.58	Sesquiterpene
Thujopsadiene	20.26	1439	0.03				Sesquiterpene
Germacrene D	21.63	1457	0.47	0.35	1621	12.55	Sesquiterpene
α -Muurolene	23.53	1482	0.05	0.02	1653	14.09	Sesquiterpene
γ -Cadinene	24.45	1494	0.04	0.04	1678	15.27	Sesquiterpene
δ -Cadinene	25.08*	1502	0.18	0.16	1685	15.60	Sesquiterpene
β -Bisabolene	25.08*	1502	[0.18]	0.03	1673	15.02	Sesquiterpene
α -Cedrol	32.09	1585	1.56	1.60	2000	35.53	Sesquiterp. alcohol
Total identified			99.16%	98.99%			

*: 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 : 1.4680 \pm 0.0003 (20 °C)

CONCLUSION

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

Checked and approved by :

Alexis St-Gelais, M. Sc., chimiste 2013-174

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