



**PLANT THERAPY**  
100% PURE ESSENTIAL OILS

## GC/MS BATCH NUMBER: CLO105

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**ESSENTIAL OIL:** CYPRESS

**BOTANICAL NAME:** CUPRESSUS SEMPERVIRENS

**ORIGIN:** SPAIN

KEY CONSTITUENTS PRESENT IN THIS BATCH OF CYPRESS OIL	%
$\alpha$ -PINENE	51.0
$\Delta^3$ -CARENE	24.6
TERPINOLENE	3.4
LIMONENE	2.9
MYRCENE	2.5
$\alpha$ -TERPINYL ACETATE	2.0
$\beta$ -PINENE	1.3
TERPINEN-4-ol	1.2
$\alpha$ -CEDROL	1.0

Comments from Robert Tisserand: Very nice green-woody odor quality. Meets 8 of 9 ISO standards, with germacrene D slightly low - not a concern.

**Date :** February 16, 2017

*SAMPLE IDENTIFICATION*

**Internal code :** 17A30-PTH15-1-DM

**Customer identification :** Cypress - Spain - CL010568R

**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 :** 2017-02-13

Checked and approved by :

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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.	
ξ-Fenchene	2.94	900	0.04	0.04	892	0.97	Monoterpene
Tricyclene	3.21	917	0.12	0.11	930	1.12	Monoterpene
α-Thujene	3.30	922	0.60	0.71	971	1.31	Monoterpene
α-Pinene	3.47	932	51.01	50.84	968	1.29	Monoterpene
α-Fenchene	3.67	944	0.52	0.50	994	1.48	Monoterpene
Camphene	3.69	945	0.25	0.24	1000	1.54	Monoterpene
Thuja-2,4(10)-diene	3.77	950	0.03	0.84	1062	2.09*	Monoterpene
Sabinene	4.11	970	0.89	[0.84]	1062	2.09*	Monoterpene
β-Pinene	4.17	974	1.25	1.22	1043	1.92	Monoterpene
Myrcene	4.45	990	2.51	2.57	1120	2.70	Monoterpene
2-Carene	4.64	1002	0.02	0.02	1076	2.22	Monoterpene
Δ3-Carene	4.78*	1009	24.62	24.62	1103	2.47	Monoterpene
α-Phellandrene	4.78*	1009	[24.62]	0.17	1112	2.60	Monoterpene
α-Terpinene	4.91	1016	0.37	0.41	1126	2.78	Monoterpene
meta-Cymene	5.03	1023	0.12	0.11	1115	2.63	Monoterpene
para-Cymene	5.08	1026	0.30	0.35	1211	3.94	Monoterpene
Limonene	5.14	1029	2.89	2.89	1144	3.03	Monoterpene
β-Phellandrene	5.16	1030	0.29	0.64	1149	3.10*	Monoterpene
1,8-Cineole	5.20	1032	0.36	[0.64]	1149	3.10*	Monoterp. ether
cis-β-Ocimene	5.31	1038	0.01	0.89	1192	3.66*	Monoterpene
trans-β-Ocimene	5.49	1048	0.03	0.03	1204	3.83	Monoterpene
Lavender lactone	5.57	1052	0.04	0.04	1609	13.75	Lactone
γ-Terpinene	5.67	1058	0.90	[0.89]	1192	3.66*	Monoterpene
Isoterpinolene	6.07	1079	0.11	0.10	1221	4.10	Monoterpene
Terpinolene	6.16	1084	3.39	3.34	1227	4.18	Monoterpene
para-Cymenene	6.32	1093	0.07	0.07	1368	6.38	Monoterpene
α-Pinene oxide	6.47	1101	0.01	0.01	1302	5.31	Monoterp. ether
Linalool	6.55	1104	0.50	0.50	1497	9.33	Monoterp. alcohol
trans-Pinocarveol	7.45	1137	0.02	0.02	1569	12.06	Monoterp. alcohol
Camphor	7.66	1145	0.11	0.11	1423	7.52	Monoterp. ketone
Karahanaenone	7.91	1154	0.20	0.20	1435	7.80	Monoterp. ketone
Isoborneol	8.19	1164	0.02	0.02	1599	13.20	Monoterp. alcohol
Borneol	8.38	1171	0.23	0.17	1617	14.21	Monoterp. alcohol
Terpinen-4-ol	8.60	1179	1.17	1.37	1527	10.46*	Monoterp. alcohol
para-Cymen-8-ol	9.01	1194	0.04	0.05	1766	23.11	Monoterp. alcohol
α-Terpineol	9.18	1200	0.43	0.48	1622	14.45	Monoterp. alcohol
Eucarvone	9.73	1212	0.02				Monoterp. ketone
Carvacrol methyl ether	10.75	1235	0.01	0.01	1536	10.79	Monoterp. ether
Bornyl acetate	12.76	1280	0.16	0.16	1504	9.58	Monoterp. ester
trans-Pinocarvyl acetate	13.32	1292	0.17	[1.37]	1527	10.46*	Monoterp. ester
trans-β-Terpinyl acetate	15.59	1329	0.19	0.19	1603	13.44	Monoterp. ester

α-Cubebene	15.79	1332	0.08	0.08	1403	7.01	Sesquiterpene
α-Terpinyl acetate	16.41	1341	1.95	2.26	1614	14.04*	Monoterp. ester
α-Copaene	17.46	1357	0.09	0.10	1426	7.57	Sesquiterpene
α-Cedrene	19.85*	1394	0.42	0.19	1488	9.08	Sesquiterpene
β-Funebrene?	19.85*	1394	[0.42]	0.21	1491	9.15	Sesquiterpene
β-Caryophyllene	20.27	1400	0.27	0.27	1514	9.98	Sesquiterpene
β-Cedrene	20.42	1402	0.10	[1.37]	1527	10.46*	Sesquiterpene
α-Humulene	23.00	1433	0.13	0.14	1577	12.36	Sesquiterpene
γ-Murolene	25.05	1457	0.14	0.19	1605	13.55	Sesquiterpene
Germacrene D	25.18	1459	0.24	[2.26]	1614	14.04*	Sesquiterpene
Bicyclogermacrene	26.47	1475	0.04	0.05	1635	15.18	Sesquiterpene
α-Murolene	27.17	1483	0.07	0.07	1638	15.32	Sesquiterpene
γ-Cadinene	27.95	1492	0.05	0.09	1661	16.57	Sesquiterpene
δ-Cadinene	28.85	1504	0.27	0.26	1667	16.89	Sesquiterpene
α-Cedrol	34.88	1588	0.97	1.01	1986	36.63	Sesquiterp. alcohol
α-Cadinol	37.59	1645	0.02	0.02	2121	41.01	Sesquiterp. alcohol
Isopimaradiene?	46.73	1939	0.02				Diterpene
Manoyl oxide	47.53	1971	0.01	0.01	2191	42.84	Diterp. ether
<b>Total identified</b>			<b>98.89%</b>	<b>98.99%</b>			

\*: 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 :** 1.4705 ± 0.0003 (20 °C)

#### CONCLUSION

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



