

GC/MS BATCH NUMBER: CB0102

ESSENTIAL OIL: CINNAMON LEAF
BOTANICAL NAME: CINNAMOMUM VERUM
ORIGIN: SRI LANKA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF CINNAMON LEAF OIL	%
EUGENOL	76.6
β -CARYOPHYLLENE	3.3
BENZYL BENZOATE	3.2
EUGENYL ACETATE	2.5
LINALOOL	2.1
(E)-CINNAMYL ACETATE	1.5
(E)-CINNAMALDEHYDE	1.3
α -PHELLANDRENE	1.2

Comments from Robert Tisserand: Rich, clove-spicy odor quality. All five key ISO constituents are within range.

Date : September 7, 2017

SAMPLE IDENTIFICATION

Internal code : 17H30-PTH6-1-DM

Customer identification : Cinnamon Leaf - Sri Lanka - CB0102611R

Type : Essential oil

Source : *Cinnamomum verum*

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 : Alexis St-Gelais, M. Sc., chimiste

Analysis date : 2017-09-01

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	tr	0.31	951	1.24*	Simple phenolic
Styrene	2.90	895	0.02	0.08	1191	3.63*	Phenylpropanoid
α -Thujene	3.31	920	0.13	[1.03]	951	1.24+*	Monoterpene
α -Pinene	3.42	927	0.95	[1.03]	941	1.20†	Monoterpene
Camphene	3.71	944	0.33	0.29	992	1.51	Monoterpene
Sabinene	4.14	969	0.01	0.02	1058	2.05	Monoterpene
β -Pinene	4.20	973	0.23	0.29	1037	1.88	Monoterpene
Benzaldehyde	4.21	973	0.28	0.76	1431	7.64*	Simple phenolic
Myrcene	4.48	989	0.13	1.20	1111	2.62†	Monoterpene
α -Phellandrene	4.76*	1005	1.21	[1.20]	1106	2.56†	Monoterpene
Δ 3-Carene	4.76*	1005	[1.21]	0.06	1091	2.37	Monoterpene
α -Terpinene	4.94	1015	0.10	0.14	1120	2.73*	Monoterpene
meta-Cymene	5.04	1020	0.01	[0.14]	1120	2.73*	Monoterpene
para-Cymene	5.14	1025	0.64	0.67	1210	3.91	Monoterpene
Limonene	5.17	1027	0.30	0.20	1140	2.99*	Monoterpene
β -Phellandrene	5.20	1029	0.37	0.58	1144	3.06	Monoterpene
1,8-Cineole	5.23	1031	0.11	[0.20]	1140	2.99*	Monoterp. ether
cis- β -Ocimene	5.35	1037	0.02	[0.08]	1191	3.63*	Monoterpene
trans- β -Ocimene	5.53	1047	0.05	0.03	1204	3.82	Monoterpene
γ -Terpinene	5.68	1055	0.05	[0.08]	1191	3.63*	Monoterpene
Benzyl alcohol	5.72	1057	0.04	0.06	1775	23.53*	Simple phenolic
cis-Linalool oxide (fur.)	6.00	1072	0.02	0.01	1376	6.47	Monoterp. alcohol
Isoterpinolene	6.12	1079	0.01	0.11	1225	4.13*	Monoterpene
Terpinolene	6.20	1083	0.11	[0.11]	1225	4.13*	Monoterpene
trans-Linalool oxide (fur.)	6.32	1090	0.02	0.03	1403	6.98	Monoterp. alcohol
2-Methylbutyl 2-methylbutyrate	6.62	1103	0.03	0.03	1232	4.25	Aliphatic ester
Linalool	6.70	1107	2.05	2.05	1495	9.21	Monoterp. alcohol
Hydrocinnamaldehyde	8.40	1168	0.05				Phenylpropanoid
3-Methylbenzofuran	8.47	1171	0.06				Phenylpropanoid
Borneol	8.62	1176	0.05	0.29	1619	14.13*	Monoterp. alcohol
Terpinen-4-ol	8.79	1182	0.08	3.44	1518	10.04*	Monoterp. alcohol
para-Cymen-8-ol	9.34	1201	0.03	[0.06]	1775	23.53*	Monoterp. alcohol
α -Terpineol	9.45	1203	0.23	[0.29]	1619	14.13*	Monoterp. alcohol
α -Phellandrene epoxide	9.72	1209	0.02	0.05	1717	19.58	Monoterpene
Hydrocinnamyl alcohol	11.16	1240	0.07	0.09	1942	34.50	Phenylpropanoid
(E)-Cinnamaldehyde	13.18	1285	1.28	1.23	1901	32.62	Phenylpropanoid
Safrole	13.57	1293	0.91	0.93	1761	22.61	Phenylpropanoid
(E)-Cinnamyl alcohol	15.81	1329	0.10	0.10	2166	42.06	Phenylpropanoid
Eugenol	18.47*	1369	77.19	76.63	2063	39.16	Phenylpropanoid
α -Copaene	18.47*	1369	[77.19]	[0.76]	1431	7.64*	Sesquiterpene

Hydrocinnamyl acetate	18.96	1376	0.10				Phenylpropanoid ester
β-Caryophyllene	20.72	1402	3.29	[3.44]	1518	10.04*	Sesquiterpene
Methyleugenol	21.64	1413	0.04	0.03	1932	34.04	Phenylpropanoid
Aromadendrene	22.03	1417	0.04	[3.44]	1518	10.04*	Sesquiterpene
α-Humulene	23.44	1434	0.54	0.53	1580	12.36	Sesquiterpene
allo-Aromadendrene	23.69	1437	0.02	0.02	1559	11.57	Sesquiterpene
(E)-Cinnamyl acetate	25.06	1453	1.49	1.48	2040	38.46	Phenylpropanoid ester
Germacrene D	25.64	1460	0.02	[0.29]	1619	14.13*	Sesquiterpene
Ethyl (E)-cinnamate	26.44	1470	0.05	0.04	2014	37.61	Phenylpropanoid ester
Bicyclogermacrene	26.87	1475	0.13	0.24	1637	15.11*	Sesquiterpene
α-Murolene	27.64	1484	0.04	[0.24]	1637	15.11*	Sesquiterpene
γ-Cadinene	28.70	1497	0.05	0.04	1665	16.60	Sesquiterpene
δ-Cadinene	29.35	1506	0.14	0.18	1671	16.92	Sesquiterpene
Eugenyl acetate	31.30	1533	2.45	2.47	2156	41.79	Phenylpropanoid ester
Caryophyllene oxide	33.82	1569	0.39	0.37	1843	28.42	Sesquiterp. ether
Humulene epoxide II	35.49	1592	0.05	0.05	1897	32.40	Sesquiterp. ether
Benzyl benzoate	42.34	1772	3.17	3.32	2476	48.98	Phenolic ester
Total identified			99.30%	98.45%			

*: Two or more compounds are coeluting on this column

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

†: Peaks apexes were resolved, but peaks overlapped and were summed for analysis

Note: no correction factor was applied

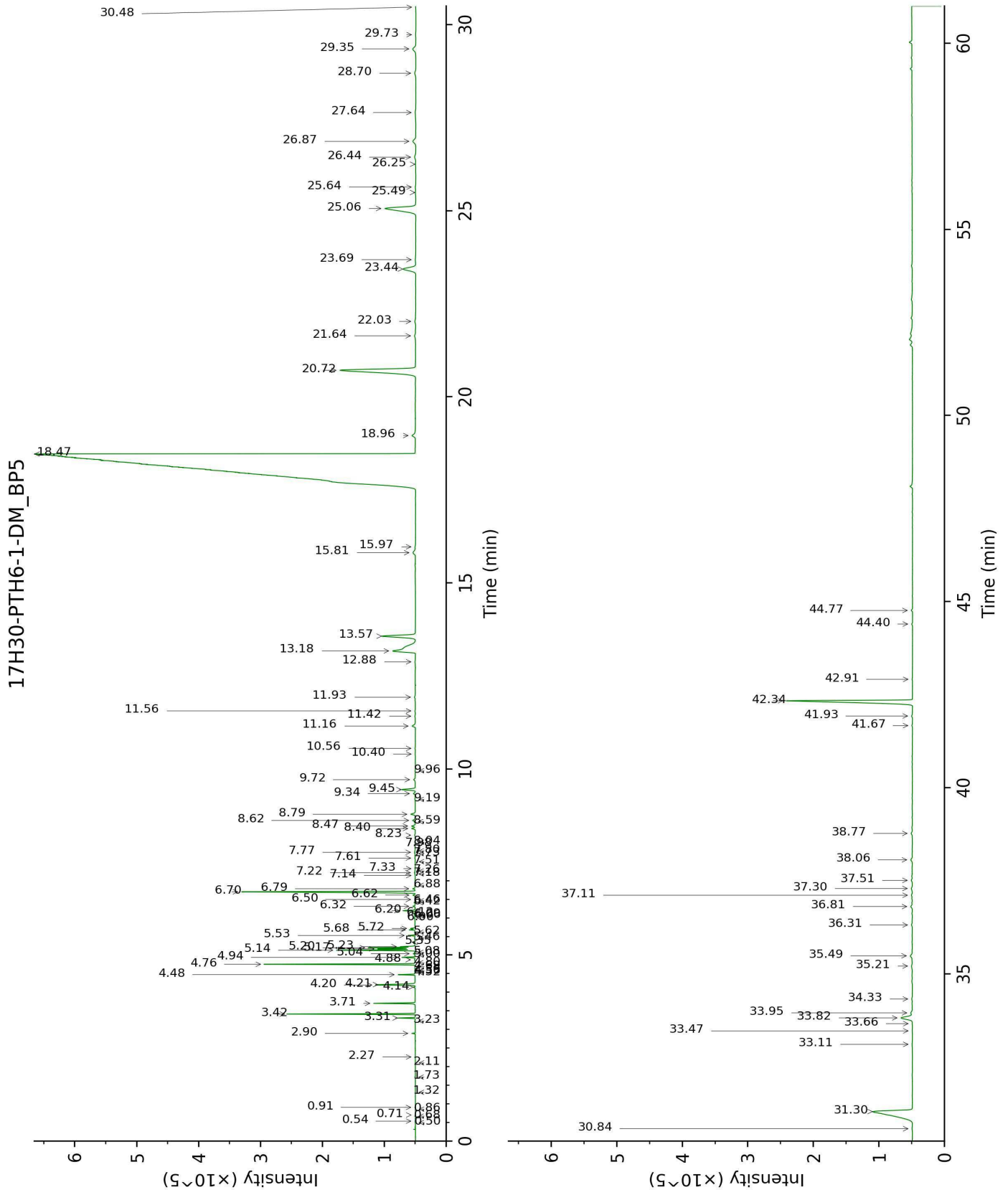
OTHER DATA

Physical aspect : Yellow liquid

Refractive index : 1.5285 ± 0.0003 (20 °C)

CONCLUSION

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



17H30-PTH6-1-DM_WAX

