

GC/MS BATCH NUMBER: SZ0100

ESSENTIAL OIL: SARO
BOTANICAL NAME: CINNAMOSMA FRAGRANS
ORIGIN: MADAGASCAR

KEY CONSTITUENTS PRESENT IN THIS BATCH OF OIL	%
1,8-CINEOLE	59.4
SABINENE	9.8
β-PINENE	6.5
α-PINENE	4.4
LINALOOL	3.4
TERPINEN-4-OL	2.6
MYRCENE	2.0
α-TERPINEOL	1.9
α-TERPINYL ACETATE	1.6

Comments from Robert Tisserand: Very good odor quality and constituents are in expected amounts.

Date : September 28, 2016

SAMPLE IDENTIFICATION

Internal code : 16116-PTH10-1-DM

Customer identification : Saro - SZ010066R

Type : Essential oil

Source : *Cinnamosma fragrans*

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 : 2016-09-26

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.	
α -Thujene	3.25	918	0.41	0.76	952	0.89	Monoterpene
α -Pinene	3.36	925	4.43	4.12	946	0.86	Monoterpene
α -Fenchene	3.62	940	0.01	0.01	985	1.02	Monoterpene
Camphene	3.64	942	0.08	0.08	996	1.07	Monoterpene
Sabinene	4.10	969	9.79	10.01	1058	1.51	Monoterpene
β -Pinene	4.16	973	6.45	6.39	1040	1.37	Monoterpene
Myrcene	4.42	989	2.02	1.90	1115	1.98	Monoterpene
Pseudolimonene	4.63	1001	0.09	0.09	1109	1.92*	Monoterpene
α -Phellandrene	4.69	1004	0.04	[0.09]	1109	1.92*	Monoterpene
α -Terpinene	4.88	1015	0.47	0.59	1122	2.06	Monoterpene
1,8-Cineole	5.24*	1035	60.27	59.42	1152	2.42*	Monoterp. ether
Limonene	5.24*	1035	[60.27]	[59.42]	1152	2.42*	Monoterpene
para-Cymene	5.24*	1035	[60.27]	1.31	1207	3.04	Monoterpene
<i>cis</i> - β -Ocimene	5.30	1038	0.49	1.34	1187	2.82*	Monoterpene
<i>trans</i> - β -Ocimene	5.47	1048	0.36	0.30	1201	2.98	Monoterpene
γ -Terpinene	5.65	1058	0.93	[1.34]	1187	2.82*	Monoterpene
<i>cis</i> -Sabinene hydrate	6.01	1077	0.07	0.08	1406	5.84	Monoterp. alcohol
Terpinolene	6.12	1083	0.26	0.25	1222	3.25	Monoterpene
Linalool	6.68*	1108	3.43	3.46	1491	7.39*	Monoterp. alcohol
<i>trans</i> -Sabinene hydrate	6.68*	1108	[3.43]	0.05	1495	7.47	Monoterp. alcohol
<i>cis</i> -para-Menth-2-en-1-ol	7.16	1126	0.09	[3.46]	1491	7.39*	Monoterp. alcohol
Camphor	7.68	1145	0.05	0.06	1436	6.36	Monoterp. ketone
δ -Terpineol	8.55	1178	0.26	0.38	1595	10.14*	Monoterp. alcohol
Terpinen-4-ol	8.72	1184	2.55	2.84	1529	8.18	Monoterp. alcohol
α -Terpineol	9.39	1204	1.93	1.98	1626	11.08	Monoterp. alcohol
<i>trans</i> -Piperitol	9.89	1215	0.03	0.02	1666	12.84	Monoterp. alcohol
Bornyl acetate	12.72	1278	0.04	0.04	1501	7.58	Monoterp. ester
δ -Terpinyl acetate	14.38	1309	0.18	0.17	1568	9.34	Monoterp. ester
exo-2-Hydroxycineole acetate	15.70	1329	0.14				Monoterp. ester
α -Terpinyl acetate	16.45	1341	1.55	1.53	1618	10.82	Monoterp. ester
α -Ylangene	17.03	1350	0.01	0.01	1422	6.09	Sesquiterpene
β -Caryophyllene	20.25*	1398	0.85	0.33	1526	8.08	Sesquiterpene
Geranic acid	20.25*	1398	[0.85]	0.30	2258	41.42	Monoterp. acid
<i>cis</i> -Muurolo-3,5-diene	22.61	1427	0.02	0.02	1558	9.03	Sesquiterpene
α -Humulene	23.01	1432	0.20	0.20	1585	9.84	Sesquiterpene
<i>trans</i> -Cadin-1(6),4-diene	24.17	1446	0.02	[0.38]	1595	10.14*	Sesquiterpene
Germacrene D	25.20	1458	0.04	0.05	1632	11.36	Sesquiterpene
δ -Cadinene	28.91	1503	0.10	0.09	1677	13.31	Sesquiterpene
<i>trans</i> -Calamenene	29.30	1508	0.10	0.10	1740	16.18	Sesquiterpene

Caryophyllene oxide	33.51	1566	0.33	0.24	1851	22.81	Sesquiterp. ether
Total identified			98.09%	98.52%			

*: 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 : 1.4650 ± 0.0003 (20 °C)

CONCLUSION

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



