

Date : April 28, 2016

SAMPLE IDENTIFICATION

Internal code : 16D18-SPE1-1-SM

Customer identification : Basil

Type : Essential oil

Source : *Ocimum basilicum*

Customer : Spa Essentials

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 : 2016-04-28

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.	
<i>cis</i> -Hex-3-en-1-ol	2.30	862	0.03	0.03	1336	4.92	Aliphatic alcohol
α -Thujene	3.09	921	0.09	0.09	959	0.94	Monoterpene
α -Pinene	3.19	927	0.39	0.35	950	0.91	Monoterpene
Camphene	3.46	944	0.10	0.10	1005	1.14	Monoterpene
Sabinene	3.89	970	0.23	0.22	1060	1.58	Monoterpene
β -Pinene	3.94	973	0.46	0.45	1043	1.44	Monoterpene
Myrcene	4.23	991	0.49	0.38	1118	2.08	Monoterpene
Octen-3-ol	4.27	994	0.02	0.05	1407	5.95	Aliphatic alcohol
6-Methyl-5-hepten-2-one	4.31	996	0.01	0.01	1282	4.15	Aliphatic ketone
Octan-3-ol	4.52	1008	0.01	0.02	1356	5.21	Aliphatic alcohol
α -Terpinene	4.67	1017	0.07	0.05	1125	2.15	Monoterpene
para-Cymene	4.85	1027	0.31	0.32	1212	3.18	Monoterpene
Limonene	4.90	1029	0.39	0.32	1143	2.36	Monoterpene
β -Phellandrene	4.92	1031	0.03	3.88	1150	2.45*	Monoterpene
1,8-Cineole	4.97	1033	3.86	[3.88]	1150	2.45*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.08	1040	0.10	0.16	1191	2.93*	Monoterpene
<i>trans</i> - β -Ocimene	5.26	1050	0.64	0.58	1207	3.11	Monoterpene
γ -Terpinene	5.44	1060	0.11	[0.16]	1191	2.93*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	5.71	1075	0.07	0.07	1386	5.64	Monoterp. alcohol
<i>cis</i> -Sabinene hydrate	5.74	1077	0.15	0.19	1415	6.08	Monoterp. alcohol
Terpinolene	5.91	1086	0.13	0.11	1227	3.39	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	5.98	1090	0.04	0.05	1413	6.05	Monoterp. alcohol
Linalool	6.51*	1115	63.71	65.02	1514	7.97	Monoterp. alcohol
<i>trans</i> -Sabinene hydrate	6.51*	1115	[63.71]	0.10	1492	7.54	Monoterp. alcohol
Camphor	7.34	1147	0.35	0.49	1428	6.33	Monoterp. ketone
Menthone	7.57	1156	0.03	0.03	1395	5.77	Monoterp. ketone
Borneol	8.04*	1175	0.33	0.68	1631	11.73*	Monoterp. alcohol
δ -Terpineol	8.04*	1175	[0.33]	0.12	1606	10.76*	Monoterp. alcohol
Terpinen-4-ol	8.24	1183	1.80	3.00	1536	8.63*	Monoterp. alcohol
α -Terpineol	8.80	1204	0.51	0.43	1637	11.99	Monoterp. alcohol
Methylchavicol	8.86	1205	0.35	0.27	1592	10.33	Phenylpropanoid
Nerol	9.84	1228	0.06	0.09	1736	16.67	Monoterp. alcohol
Neral	10.42	1242	0.06	[0.12]	1606	10.76*	Monoterp. aldehyde
Geraniol	11.11	1258	4.57	4.89	1790	19.87	Monoterp. alcohol
Geranial	11.82	1275	0.12	0.11	1653	12.73	Monoterp. aldehyde
Bornyl acetate	12.11	1282	0.83	0.92	1518	8.08	Monoterp. ester
Eugenol	16.35	1357	2.99	2.84	2066	36.47	Phenylpropanoid
β -Bourbonene	16.60	1361	0.08	0.06	1459	6.92	Sesquiterpene
β -Cubebene	16.99	1367	0.09	0.09	1485	7.40	Sesquiterpene
β -Elemene	17.76	1379	0.63	0.49	1530	8.43	Sesquiterpene

Geranyl acetate	18.19	1386	0.55	0.64	1695	14.61*	Monoterp. ester
β-Caryophyllene	19.31*	1404	0.33	0.16	1526	8.31	Sesquiterpene
cis-α-Bergamotene	19.31*	1404	[0.33]	0.13	1516	8.03	Sesquiterpene
β-Gurjunene	19.44	1406	0.07	0.03	1523	8.21	Sesquiterpene
trans-α-Bergamotene	20.95*	1424	4.06	[3.00]	1536	8.63*	Sesquiterpene
α-Guaiene	20.95*	1424	[4.06]	2.69	1534	8.57	Sesquiterpene
α-Humulene	21.97	1436	0.39	0.35	1578	9.89	Sesquiterpene
Dauca-5,8-diene	22.61	1444	0.34	0.47	1587	10.19	Sesquiterpene
trans-β-Farnesene	23.15	1451	0.11	0.11	1623	11.33	Sesquiterpene
Germacrene D	24.12	1463	1.67	1.82	1626	11.51	Sesquiterpene
Viridiflorene	24.79	1471	0.20	0.20	1619	11.16	Sesquiterpene
Bicyclgermacrene	25.29	1477	0.28	0.18	1645	12.37	Sesquiterpene
Valencene	25.99	1486	0.48	0.38	1667	13.33	Sesquiterpene
δ-Guaiene	26.18	1488	0.55	[0.68]	1631	11.73*	Sesquiterpene
γ-Cadinene	27.09	1499	1.67	1.75	1672	13.57*	Sesquiterpene
trans-Calamenene	27.70*	1507	0.25	0.10	1734	16.55	Sesquiterpene
δ-Cadinene	27.70*	1507	[0.25]	[1.75]	1672	13.57*	Sesquiterpene
trans-Cadina-1,4-diene	28.56	1518	0.13	[0.64]	1695	14.61*	Sesquiterpene
(E)-Nerolidol	32.51*	1570	0.54	0.31	1995	33.20	Sesquiterp. alcohol
Spathulenol	32.51*	1570	[0.54]	0.15	2021	34.79	Sesquiterp. alcohol
Humulene epoxide II	33.47	1582	0.05	0.07	1905	27.63	Sesquiterp. ether
1,10-diepi-Cubenol	34.89	1601	0.36	0.32	1956	30.90	Sesquiterp. alcohol
τ-Cadinol	36.51	1637	1.92	1.94	2076	36.82	Sesquiterp. alcohol
α-Cadinol	37.06	1650	0.14	0.19	2127	38.61	Sesquiterp. alcohol
Total identified			98.33%	99.05%			

*: 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 : 1.4700 ± 0.0003 (20 °C)

CONCLUSION

No adulterant, contaminant or diluent were detected using this method. This sample belongs to the linalool chemotype of basil.



