

Date : August 16, 2017

SAMPLE IDENTIFICATION

Internal code : 17H11-ORA3-1-DM

Customer identification : Rosemary

Type : Essential oil

Source : *Rosmarinus officinalis*

Customer : Organic Aromas

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 : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-08-16

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	2.51	866	0.01	tr	1329	5.70	Aliphatic alcohol
Tricyclene	3.23	915	0.13	0.13	923	1.13	Monoterpene
α -Thujene	3.32	921	0.09	0.14	962	1.29	Monoterpene
α -Pinene	3.45	928	12.14	11.76	956	1.26	Monoterpene
Camphene	3.72	944	4.79	4.19	998	1.56	Monoterpene
Thuja-2,4(10)-diene	3.80	949	0.02	0.10	1062	2.10*	Monoterpene
Sabinene	4.15	969	0.08	[0.10]	1062	2.10*	Monoterpene
β -Pinene	4.23	974	9.00	8.72	1047	1.95	Monoterpene
Myrcene	4.48	989	0.66	0.62	1118	2.70	Monoterpene
Octan-3-one	4.53	992	0.02	0.02	1203	3.80	Aliphatic ketone
Octen-3-ol	4.58	995	0.06	0.06	1402	6.95	Aliphatic alcohol
α -Phellandrene	4.76*	1005	0.09	0.06	1110	2.61	Monoterpene
Δ^3 -Carene	4.76*	1005	[0.09]	0.03	1095	2.42	Monoterpene
α -Terpinene	4.95	1015	0.10	0.09	1125	2.79	Monoterpene
1,8-Cineole	5.31*	1035	54.06	52.19	1155	3.20*	Monoterp. ether
Limonene	5.31*	1035	[54.06]	[52.19]	1155	3.20*	Monoterpene
para-Cymene	5.31*	1035	[54.06]	2.24	1214	3.97	Monoterpene
<i>cis</i> - β -Ocimene	5.36	1038	0.05	0.35	1195	3.68*	Monoterpene
<i>trans</i> - β -Ocimene	5.54	1047	0.01	0.01	1207	3.86	Monoterpene
γ -Terpinene	5.73	1058	0.32	[0.35]	1195	3.68*	Monoterpene
<i>cis</i> -Sabinene hydrate	6.06	1076	0.02	0.03	1407	7.07	Monoterp. alcohol
Terpinolene	6.20	1083	0.08	0.08	1228	4.18	Monoterpene
Linalool	6.71	1107	0.41	0.41	1498	9.32	Monoterp. alcohol
endo-Fenchol	7.18	1124	0.03	1.33	1520	10.11*	Monoterp. alcohol
<i>trans</i> -Pinocarveol	7.66	1141	0.05	0.04	1571	12.03	Monoterp. alcohol
Camphor	7.82	1147	12.18	12.36	1429	7.57	Monoterp. ketone
Camphene hydrate	8.04	1155	0.02	[1.33]	1520	10.11*	Monoterp. alcohol
Pinocarvone	8.21	1161	0.03	0.03	1478	8.76	Monoterp. ketone
Borneol	8.64	1177	1.96	1.85	1620	14.19	Monoterp. alcohol
Terpinen-4-ol	8.80	1182	0.25	0.27	1528	10.41	Monoterp. alcohol
α -Terpineol	9.46	1203	0.87	0.85	1623	14.36	Monoterp. alcohol
Bornyl acetate	12.90	1279	0.38	0.42	1506	9.61	Monoterp. ester
α -Copaene	17.69	1357	0.06	0.08	1432	7.66	Sesquiterpene
β -Caryophyllene	20.61	1400	1.26	[1.33]	1520	10.11*	Sesquiterpene
α -Humulene	23.38	1433	0.12	0.13	1583	12.46	Sesquiterpene
γ -Muurolene	25.45	1458	0.05	0.05	1610	13.68	Sesquiterpene
γ -Cadinene	28.67	1496	0.03	0.03	1667	16.72	Sesquiterpene
β -Bisabolene	28.83	1498	0.03	0.03	1657	16.19	Sesquiterpene
δ -Cadinene	29.31	1505	0.06	0.05	1674	17.07	Sesquiterpene

Caryophyllene oxide	33.78	1568	0.08	0.07	1844	28.44	Sesquiterp. ether
Total identified			99.60%	98.82%			

*: 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

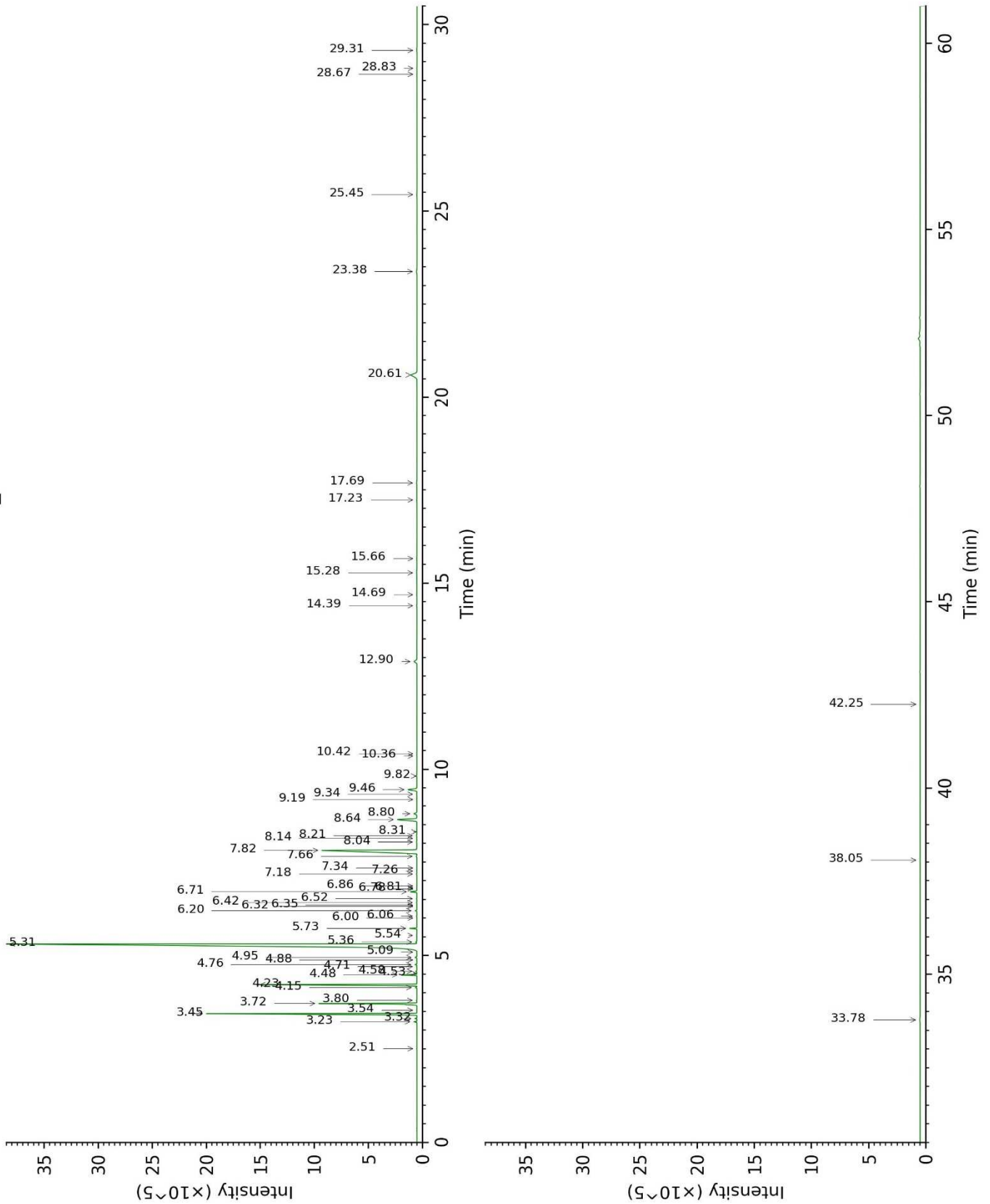
Physical aspect : Clear liquid

Refractive index : 1.4645 ± 0.0003 (20 °C)

CONCLUSION

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

17H11-ORA3-1-DM_BP5



17H11-ORA3-1-DM_WAX

