

GC/MS BATCH NUMBER: C90106

ESSENTIAL OIL: ROMAN CHAMOMILE
BOTANICAL NAME: CHAMAEMELUM NOBILE
ORIGIN: UK

KEY CONSTITUENTS PRESENT IN THIS BATCH OF ROMAN CHAMOMILE OIL	%
3-METHYLAMYL ANGELATE	17.8
METHALLYL ANGELATE	13.0
ISOBUTYL ANGELATE	8.7
2-METHYLBUTYL ANGELATE	8.5
ISOAMYL ANGELATE	7.0
trans-PINOCARVEOL	6.4
3-METHYLAMYL ISOBUTYRATE	4.8
α -PINENE	3.9
PINOCARVONE	3.1
3-METHYLAMYL METHACRYLATE	2.7
2-METHYLBUTYL ISOBUTYRATE	1.8
ISOBUTYL ISOBUTYRATE	1.3
PRENYL ANGELATE	1.2
PROPYL ISOBUTYRATE	1.0
ISOBUTYL METHACRYLATE	1.0

Comments from Robert Tisserand: A very good odor profile for English chamomile oil, and the composition looks good.

Date : October 28, 2015

SAMPLE IDENTIFICATION

Internal code : 15J20-PTH8-1-LC

Customer identification : Roman Chamomile - UK - C90105R

Type : Essential oil

Source : *Chamaemelum nobile*

Customer : Plant Therapy

ANALYSIS

Method : PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

Analyst : Alexis St-Gelais, M. Sc.

Analysis date : 2015-10-21

IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
Ethanol	0.28	476	0.01	0.01	892	0.65	Aliphatic alcohol
Isovaleral	0.51	565	0.09	0.07	866	0.60	Aliphatic aldehyde
2-Methylbutyral	0.53	574	0.05	0.04	859	0.59	Aliphatic aldehyde
Isoamyl alcohol	0.84	727	0.18	0.57	1174	2.94*	Aliphatic alcohol
2-Methylbutyl alcohol	0.86	731	0.24	[0.57]	1174	2.94*	Aliphatic alcohol
Isobutyl acetate	1.05	764	0.03				Aliphatic ester
Methyl angelate	1.52	822	0.09				Aliphatic ester
Ethyl 2-methylbutyrate	1.78	845	0.07	0.05	1020	1.31	Aliphatic ester
Propyl isobutyrate	1.86	852	1.04				Aliphatic ester
Isoamyl acetate	2.16	879	0.24	0.23	1092	1.95	Aliphatic ester
2-Methylbutyl acetate	2.18	881	0.09				Aliphatic ester
Propyl methacrylate	2.21	883	0.05				Aliphatic ester
Ethyl tiglate	2.42	901	0.11				Aliphatic ester
Isobutyl isobutyrate	2.65	916	1.26	1.32	1062	1.68	Aliphatic ester
α-Pinene	2.79	925	3.88	3.84	987	1.07	Monoterpene
Prenyl acetate	2.92	933	0.51	0.77	1218	3.52	Aliphatic ester
Isobutyl methacrylate	3.05*	941	1.71	1.01	1136	2.46	Aliphatic ester
Camphene	3.05*	941	[1.71]	0.71	1025	1.35	Monoterpene
Thuja-2,4(10)-diene	3.14	947	0.12	0.19	1084	1.87*	Monoterpene
Methallyl methacrylate	3.77	987	0.45				Aliphatic ester
Sabinene	3.45	967	0.05	[0.19]	1084	1.87*	Monoterpene
β-Pinene	3.50	970	0.36	0.34	1063	1.69	Monoterpene
Myrcene	3.85	992	0.13	0.12	1129	2.38	Monoterpene
Propyl angelate	3.95	999	0.76				Aliphatic ester
Isobutyl 2-methylbutyrate	4.07	1006	0.51	0.52	1148	2.62	Aliphatic ester
Isoamyl isobutyrate	4.26	1017	0.78	2.64	1169	2.88*	Aliphatic ester
2-Methylbutyl isobutyrate	4.32	1020	1.80	[2.64]	1169	2.88*	Aliphatic ester
para-Cymene	4.42	1025	0.16	0.17	1228	3.67	Monoterpene
Limonene	4.44	1027	0.14	0.13	1158	2.74	Monoterpene
1,8-Cineole	4.49	1030	0.11	0.10	1163	2.81	Monoterp. ether
Isoamyl methacrylate + 2-Methylbutyl methacrylate	4.79	1047	1.89	1.94	1243	3.90	Aliphatic ester
Isobutyl angelate	4.97	1057	8.66	8.69	1259	4.12	Aliphatic ester
Prenyl isobutyrate	5.06	1062	0.31	0.20	1286	4.51	Aliphatic ester
Methallyl angelate	5.27	1074	13.02	13.27	1344	5.39	Aliphatic ester
Butyl angelate	5.57	1091	0.13				
Isobutyl tiglate	5.64	1095	0.39	0.40	1311	4.89	Aliphatic ester
Isoamyl 2-methylbutyrate	5.78	1103	0.19				
2-Methylbutyl 2-methylbutyrate	5.83	1105	0.44	0.55	1254	4.04	Aliphatic ester
Methallyl tiglate?	5.95	1111	0.12				Aliphatic ester

3-Methylamyl isobutyrate	6.09	1117	4.75	4.69	1278	4.40	Aliphatic ester
α -Campholenal	6.30	1126	0.11				Monoterp. aldehyde
<i>trans</i> -Pinocarveol	6.62	1141	6.44	7.05	1593	11.34	Monoterp. alcohol
3-Methylamyl methacrylate	6.68	1144	2.66	2.28	1354	5.54	Aliphatic ester
Isoamyl angelate	6.77	1148	6.99	6.99	1360	5.62	Aliphatic ester
2-Methylbutyl angelate	6.87	1153	8.52	9.05	1365	5.69	Aliphatic ester
Camphene hydrate	6.95	1156	0.28	0.30	1536	9.46	Monoterp. alcohol
Pinocarvone	7.07*	1162	3.85	3.10	1499	8.27	Monoterp. ketone
Unidentified methallyl ester	7.07*	1162	[3.85]				Aliphatic ester
Isopinocampnone	7.27	1171	0.06	0.06	1526	9.15	Monoterp. alcohol
Borneol	7.35	1174	0.34	0.32	1635	13.22	Monoterp. alcohol
Prenyl angelate	7.88	1199	1.18				Aliphatic ester
Isoamyl tiglate	8.00	1203	0.43	0.16	1427	6.78	Aliphatic ester
3-Methylamyl valerate	8.07	1204	0.97	0.55	1425	6.74	Aliphatic ester
3-Methylamyl angelate	9.87	1253	17.82	17.40	1467	7.60	Aliphatic ester
Hexyl angelate	11.36	1293	0.19	0.08	1625	12.74	Aliphatic ester
β -Caryophyllene	17.84	1407	0.10	0.12	1525	9.11	Sesquiterpene
<i>trans</i> - β -Farnesene	20.82	1446	0.41	0.36	1631	13.02	Sesquiterpene
Germacrene D	21.61	1456	0.22	0.42	1629	12.95*	Sesquiterpene
γ -Murolene	22.13	1463	0.12	[0.42]	1629	12.95*	Sesquiterpene
(<i>E,E</i>)- α -Farnesene	24.99	1501	0.12	0.30	1707	16.75	Sesquiterpene
Total identified			95.73%	91.11%			

*: 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 : 1.4465 ± 0.0003 (20 °C)

CONCLUSION

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

Checked and approved by :

Alexis St-Gelais, M. Sc., chimiste 2013-174

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