

Date : September 30, 2016

SAMPLE IDENTIFICATION

Internal code : 16I23-NGA3-1-SM

Customer identification : Rosa Damascena CO2 - Bulgaria - Batch #BU-58557

Type : Essential oil

Source : *Rosa x damascena*

Customer : Nature's Gift Aromatherapy

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 : 2016-09-27

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.	
Ethanol	0.33	496	0.24	0.17	794	0.51	Aliphatic alcohol
<i>cis</i> -Hex-3-en-1-ol	2.50	865	0.01	tr	1336	4.83	Aliphatic alcohol
Hexanol	2.71	881	0.02	0.02	1295	4.25	Aliphatic alcohol
Heptanal	3.06	907	0.01	0.01	1142	2.30	Aliphatic aldehyde
α -Pinene	3.35	924	0.12	0.11	942	0.84	Monoterpene
Sabinene	4.06	967	0.01	0.01	1052	1.47	Monoterpene
β -Pinene	4.12	971	0.03	0.02	1035	1.33	Monoterpene
Benzaldehyde	4.17	974	0.01	0.01	1454	6.68	Simple phenolic
Myrcene	4.40	988	0.03	0.02	1112	1.95	Monoterpene
α -Terpinene	4.86	1014	tr	0.01	1122	2.06	Monoterpene
Limonene	5.08	1026	tr	tr	1136	2.22	Monoterpene
γ -Terpinene	5.65	1058	0.01	tr	1187	2.83	Monoterpene
Benzyl alcohol	5.74*	1063	0.50	0.47	1770	17.97	Simple phenolic
Benzeneacetaldehyde	5.74*	1063	[0.50]				Simple phenolic
Perillene	6.33	1095	tr	tr	1341	4.90	Monoterp. ether
Linalool	6.63	1106	0.04	0.03	1488	7.33	Monoterp. alcohol
<i>cis</i> -Rose oxide	6.69	1108	0.01	tr	1292	4.21	Monoterp. ether
<i>trans</i> -Rose oxide	7.04	1121	tr	0.01	1318	4.57	Monoterp. ether
Phenylethyl alcohol	7.36	1133	17.53	16.79	1805	19.95*	Simple phenolic
Terpinen-4-ol	8.70*	1183	0.05	0.05	1527	8.12*	Monoterp. alcohol
Phenylethyl formate	8.70*	1183	[0.05]				Phenolic ester
Nerol	10.51	1229	0.71	0.65	1728	15.57	Monoterp. alcohol
Citronellol	10.81	1236	2.03	1.87	1705	14.57*	Monoterp. alcohol
Neral	11.21	1245	0.01	0.02	1600	10.31	Monoterp. aldehyde
Geraniol	11.85	1260	1.53	1.40	1780	18.53	Monoterp. alcohol
Geranial	12.47	1273	0.12	0.09	1648	12.02	Monoterp. aldehyde
Citronellyl acetate	16.97	1349	0.03	0.03	1625	11.04*	Monoterp. ester
Eugenol	17.52	1357	0.46	0.41	2054	35.35	Phenylpropanoid
Geranyl acetate	19.07	1381	0.06	0.05	1689	13.81	Monoterp. ester
β -Caryophyllene	20.20*	1398	0.24	0.05	1523	8.00	Sesquiterpene
Geranic acid	20.20*	1398	[0.24]	0.19	2256	41.36	Monoterp. acid
Methyleugenol	21.31	1411	0.11	2.28	1932	28.32*	Phenylpropanoid
α -Guaiene	21.83	1417	0.01	[0.05]	1527	8.12*	Sesquiterpene
α -Humulene	22.95	1431	0.02	0.02	1581	9.73	Sesquiterpene
Germacrene D	25.15	1458	0.03	[0.03]	1625	11.04*	Sesquiterpene
δ -Guaiene	27.05	1480	0.02	0.02	1635	11.45	Sesquiterpene
Pentadecane	28.23	1494	0.02	0.02	1507	7.68	Alkane
<i>trans</i> -8-Heptadecene	38.74	1671	0.02	[1.87]	1705	14.57*	Alkene
Heptadecane	39.72	1694	0.26	0.26	1718	15.10	Alkane
(2 <i>E</i> ,6 <i>E</i>)-Farnesol	40.56	1720	0.20	0.18	2294	42.22	Sesquiterp. alcohol
Octadecane	42.91	1794	0.02	[16.79]	1805	19.95*	Alkane

<i>trans</i> -9-Nonadecene	44.88	1866	0.62	0.51	1917	27.32	Alkene
Nonadecane	45.71	1896	2.52	[2.28]	1932	28.32*	Alkane
Eicosane	48.17*	1995	0.42	0.24	2037	34.56	Alkane
Palmitic acid	48.17*	1995	[0.42]	0.15	2846	52.61	Fatty acid
<i>trans</i> -10-Heneicosene	49.79	2064	0.04	0.05	2129	37.90	Alkene
Heneicosane	50.53	2096	2.04	1.76	2145	38.42	Alkane
Linoleic acid	52.08	2166	0.17	0.18	3104	56.68	Fatty acid
Oleic acid	52.23	2173	0.03	0.05	3151	57.38	Fatty acid
Docosane	52.69	2195	0.11	0.10	2248	41.15	Alkane
Tricosane	54.81	2295	1.30	1.02	2356	43.60	Alkane
Tetracosane	56.80	2395	0.13	0.16	2372	43.94	Alkane
Pentacosane	58.75	2496	1.16	0.91	2568	47.78	Alkane
Hexacosane	60.58	2596	0.18	0.14	2672	49.67	Alkane
Unknown phenylethyl ester I	62.09	2680	0.34				Phenolic ester
Heptacosane	62.43	2698	3.00	2.70	2787	51.64	Alkane
Unknown (m/z = 69, 123 (86), 138 (82), 81 (69), 95 (67), 41 (59), 55 (53)...)	62.61	2709	0.17				
Unknown geranyl ester I	63.24	2745	0.17				Monoterp. ester
Octacosane	64.10	2796	0.28	0.18	2878	53.15	Alkane
Unknown (m/z = 105, 104 (37), 67 (20), 79 (17), 91 (14)...)	65.12	2857	0.43				
Unknown (m/z = 105, 104 (37), 79 (35), 91 (26), 67 (20)...)	65.28	2867	0.51				
<i>trans</i> -14-Nonacosene	65.49	2880	0.84				Alkene
Unknown phenylethyl ester II	65.68	2891	1.05				Phenolic ester
Nonacosane	65.81	2898	1.78	1.73	3001	55.09	Alkane
Citronellyl stearate	66.02	2911	0.25				Monoterp. ester
Unknown (m/z = 69, 81 (82), 138 (80), 95 (79), 41 (68), 123 (66), 43 (56)...)	66.11	2917	0.39				Monoterp. ester
Geranyl stearate	66.26	2926	0.33				Monoterp. ester
Unknown geranyl ester III	66.63	2949	0.61				Monoterp. ester
Unknown geranyl ester IV	66.77	2958	0.13				Monoterp. ester
Hentriacontane	68.99	3099	1.54	1.55	3215	58.34	Alkane
α -Tocopherol	69.33	3122	0.52				Tocopherol
Dotriacontane	70.45	3196	0.14	0.18	3330	60.00	Alkane
Unknown (m/z = 409, 69 (98), 55 (67), 41 (65), 95 (54)... 242? (13))	71.52	3266	1.23				Oxygenated triterp.

Unknown (m/z = 69, 163 (74), 411 (66), 41 (62), 55 (58), 105 (51), 95 (48), 191 (44)... 426? (15))	72.34	3313	2.22		Oxygenated triterp.
Unknown (m/z = 205, 68 (78), 218 (77), 107 (76), 81 (75)... 424 (42), 488 (8))	72.52	3323	4.02		Oxygenated triterp.
Unknown (m/z = 137, 324 (50), 312 (23), 91 (19), 325 (16), 488 (15))	72.95	3346	1.46		Oxygenated triterp.
Unknown (m/z = 218, 189 (61), 93 (59), 107 (57), 81 (56), 95 (55), 121 (51), 135 (51), 69 (50), 207 (50)... 426 (24))	73.27	3363	0.68		Oxygenated triterp.
Unknown (m/z = 55, 81 (94), 69 (89), 107 (89), 121 (87), 109 (87), 205 (85), 95 (83)... 424 (47))	74.56	3423	3.00		Oxygenated triterp.
Unknown (m/z = 121, 123 (68), 107 (60), 189 (58), 95 (55), 109 (52), 177 (51)... 207 (45), 426 (19))	75.25	3453	1.35		Oxygenated triterp.
Unknown (m/z = 109, 69 (79), 95 (44), 43 (41), 93 (35)... 207 (30), 426	76.72	3509	8.49		Oxygenated triterp.
Unknown (m/z = 57, 43 (98), 55 (86), 69 (84), 95 (79), 123 (73), 81 (72), 71 (70)...))	77.43	3533	1.06		Oxygenated triterp.
Total identified			44.22%	36.88%	

*: 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 : Yellow paste

Refractive index : N/A ± 0.0003 (20 °C)

CONCLUSION

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



