

# ANALYSIS Honeycomb Absolute

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Date : May 18, 2017

#### SAMPLE IDENTIFICATION

Internal code : 17E05-FSE9-1-DM

Customer identification : Beeswax Honeycomb Absolute - Lot #M1016/1

Type : Essential oil

Source : *Apis mellifera*

Customer : Flowers Shining Everywhere Inc.

#### 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 : Alexis St-Gelais, M. Sc., chimiste

Analysis date : 2017-05-15

Checked and approved by :

Alexis St-Gelais, M. Sc., chimiste

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# IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
Diethyl succinate	9.17	1200	0.03				Aliphatic ester
Ethyl laurate	35.45	1596	0.10	0.04	1790	22.66	Aliphatic ester
Diethyl suberate	35.87	1602	0.06				Aliphatic ester
Heptadecane	39.88	1701	0.02				Alkane
Ethyl dihydroferulate?	41.59	1755	0.01				Phenolic ester
Benzyl benzoate	42.07	1770	0.05	0.05	2476	48.18	Phenolic ester
Methyl syringate?	42.55	1785	0.06				Phenolic ester
Ethyl myristate	42.70	1790	0.15	0.08	2005	35.89	Aliphatic ester
Diethyl sebacate?	43.07	1802	0.13				Aliphatic ester
Nonadecane	45.80	1901	0.12	0.11	1903	30.58	Alkane
Ethyl palmitoleate	47.70	1978	0.07				Aliphatic ester
Palmitic acid	48.23	1999	4.30	5.68	2841	54.95	Fatty acid
Ethyl palmitate	48.36	2005	3.59	3.53	2214	42.40	Aliphatic ester
Heptacosane	50.58	2101	0.10	0.09	2108	39.52	Alkane
Oleic acid	52.03†	2167	7.35	4.91	3073	58.82	Fatty acid
Linoleic acid	52.03*	2167	[4.17]	1.40	3051	58.47	Fatty acid
Ethyl linoleate	52.15†	2172	[7.35]	1.64	2524	49.13	Aliphatic ester
Ethyl oleate	52.24	2176	5.85	4.73	2429	47.23	Aliphatic ester
Stearic acid	52.62	2194	1.45				Fatty acid
Ethyl stearate	52.84	2204	0.50				Aliphatic ester
cis-9-Tricosene	53.87	2253	0.10	0.13	2306	44.57	Alkene
<b>Total identified</b>			<b>24.04%</b>	<b>22.39%</b>			

\*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

†: Peaks apexes were resolved, but peaks overlapped and were summed for analysis

Note: no correction factor was applied

## OTHER DATA

**Physical aspect** : Red orange liquid

**Refractive index** : 1.4730 ± 0.0003 (20 °C)

## CONCLUSION

We cannot conclude on the purity of this sample due to lack of any retrievable reference on this matrix. Most of the sample consists of poorly volatile compounds that are not part of mass spectral databases. Compounds that could be identified are mainly fatty acids and their ethyl esters and small amounts of alkanes, which is consistent with the statement that this was extracted from a waxy substance using ethanol in the process.





