



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: CC5100

ESSENTIAL OIL: CARAWAY SEED CO2

BOTANICAL NAME: CARUM CARVI

ORIGIN: POLAND

KEY CONSTITUENTS PRESENT IN THIS BATCH OF CARAWAY SEED CO2 OIL	%
CARVONE + cis-CARVEOL	49.2
LIMONENE	36.6
NONACOSANE	1.9
SQUALENE	1.3

Comments from Robert Tisserand: Characteristic, mouth-watering caraway odor profile. Constituents are in expected amounts.

Date : August 1, 2017

SAMPLE IDENTIFICATION

Internal code : 17G28-PTH4-1-CC

Customer identification : Caraway CO2 Extract - Poland - CC510064R

Type : Essential oil

Source : *Carum carvi*

Customer : Plant Therapy

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 : 2017-07-31

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.	
α-Pinene	3.44	930	0.03	0.03	940	1.01	Monoterpene
Sabinene	4.16	973	0.05	0.05	1056	1.72	Monoterpene
β-Pinene	4.23	977	0.01	tr	1040	1.57	Monoterpene
Myrcene	4.51	994	0.33	0.33	1111	2.25	Monoterpene
Octan-3-one	4.56	997	0.01	0.01	1191	3.25	Aliphatic ketone
Limonene	5.28	1036	36.64	37.32	1145	2.67	Monoterpene
cis-β-Ocimene	5.38	1042	0.02	0.03	1183	3.14*	Monoterpene
trans-β-Ocimene	5.56	1052	0.06	0.06	1195	3.31	Monoterpene
γ-Terpinene	5.75	1062	0.02	[0.03]	1183	3.14*	Monoterpene
Linalool	6.73	1111	0.04	0.04	1480	7.89	Monoterp. alcohol
trans-para-Mentha-2,8-dien-1-ol	7.25	1130	0.05	0.05	1546	9.54	Monoterp. alcohol
cis-Limonene oxide	7.38	1134	0.04	0.04	1363	5.72	Monoterp. ether
trans-Limonene oxide	7.50	1139	0.04	0.06	1376	5.91	Monoterp. ether
cis-Dihydrocarvone	9.53*	1208	0.11	0.06	1511	8.63	Monoterp. ketone
γ-Terpineol	9.53*	1208	[0.11]	50.49	1634	12.75*	Monoterp. alcohol
trans-Dihydrocarvone	9.73	1212	0.09	0.08	1525	8.95	Monoterp. ketone
trans-Carveol	10.80	1236	0.09	0.08	1745	18.36	Monoterp. alcohol
neoiso-Dihydrocarveol	11.32	1248	0.13	0.10	1713	16.67	Monoterp. alcohol
Carvone	11.84*	1259	49.17	[50.49]	1634	12.75*	Monoterp. ketone
cis-Carveol	11.84*	1259	[49.17]	0.07	1772	19.98	Monoterp. ketone
Geranial	12.78	1280	0.04	0.04	1643	13.12	Monoterp. aldehyde
trans-Carvone oxide	12.96*	1284	0.18				Monoterp. ketone
Perillaldehyde	12.96*	1284	[0.18]				Monoterp. aldehyde
Methyl geranate	15.53	1328	0.03	[50.49]	1634	12.75*	Monoterp. ester
Limonene glycol	18.22	1369	0.04	0.03	2169	40.51	Monoterp. alcohol
β-Caryophyllene	20.70	1405	0.14	0.14	1522	8.88	Sesquiterpene
Caryophyllene oxide	33.93	1574	0.04				Sesquiterp. ester
Squalene	64.42	2818	1.25				Triterpene
Nonacosane	66.09	2919	1.88	2.08	2957	56.22	Alkane
Total identified			90.53%	91.19%			

*: 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

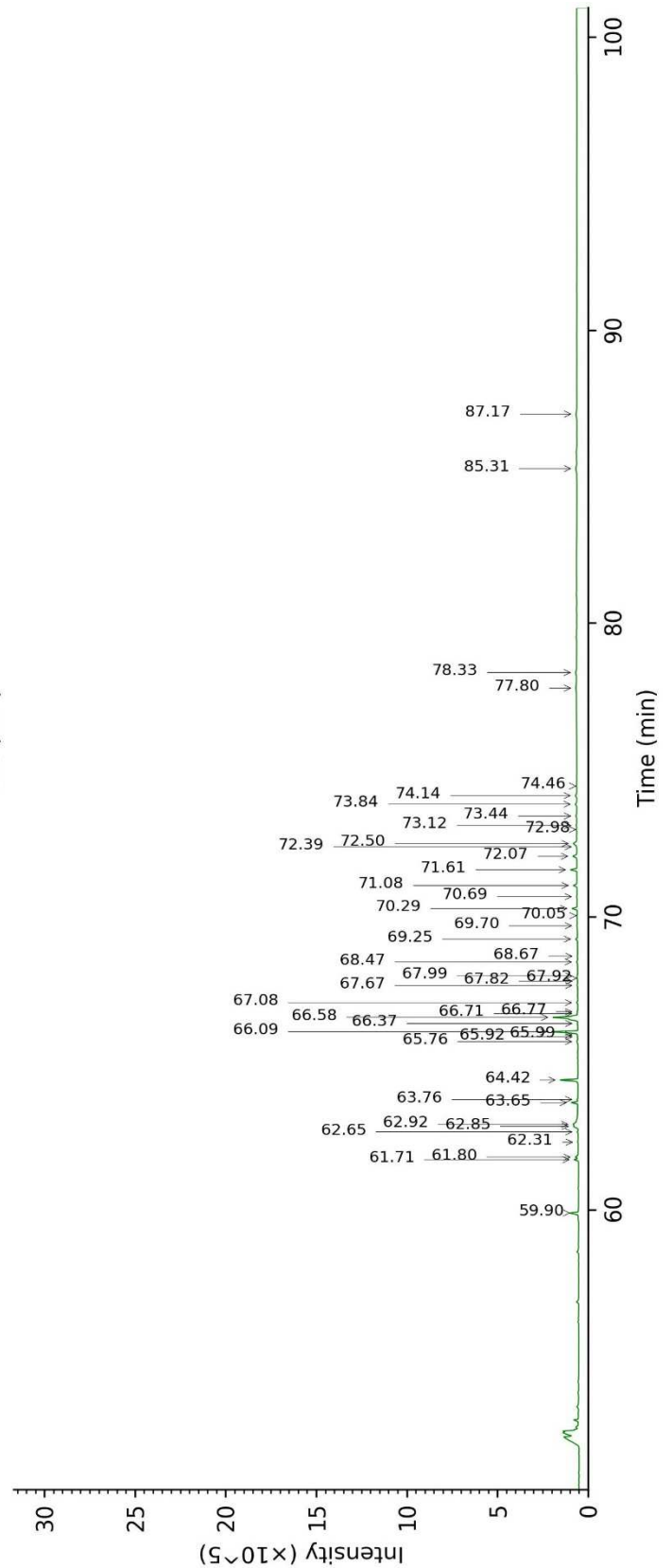
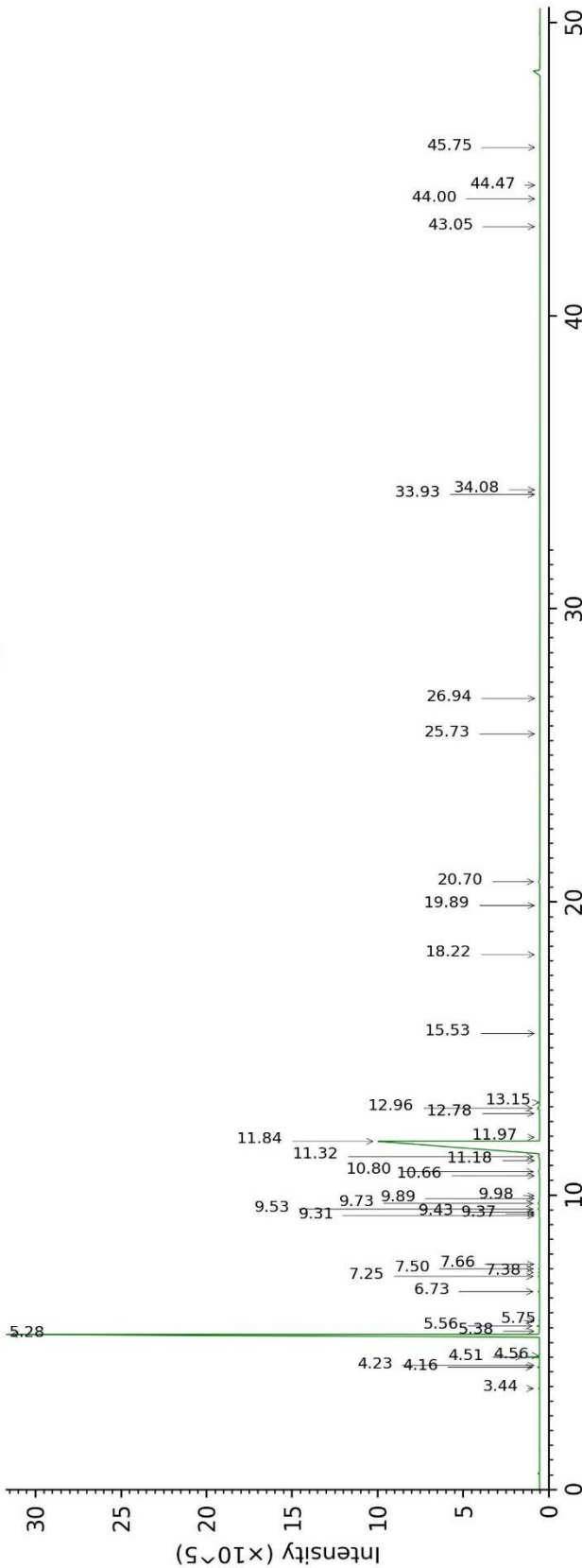
Physical aspect : Light yellow liquid

Refractive index : 1.4845 ± 0.0003 (20 °C)

CONCLUSION

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

17G28-PTH4-1-CC_BP5



17G28-PTH4-1-CC_WAX

