

GC/MS BATCH NUMBER: C40103

ESSENTIAL OIL: CARROT SEED

BOTANICAL NAME: DAUCUS CAROTA

ORIGIN: FRANCE

KEY CONSTITUENTS PRESENT IN THIS BATCH OF CARROT SEED OIL	%
CAROTOL	34.1
α -PINENE	10.8
β -CARYOPHYLLENE	10.5
β -EUDESMOL	10.3
α -EUDESMOL	3.3
α -ELEMOL	3.2
10-EPI- γ -EUDESMOL	2.4
β -PINENE	2.3
DAUCENE	1.9
GERANIOL	1.8
γ -EUDESMOL	1.7
β -SESQUIPELLANDRENE	1.7
trans- β -FARNESENE	1.2
β -BISABOLENE	1.1

Comments from Robert Tisserand: Very good odor profile, with constituents in normal amounts.

Date : June 15, 2016

SAMPLE IDENTIFICATION

Internal code : 16F09-PTH1-1-SM

Customer identification : Carrot Seed - France - C4010363

Type : Essential oil

Source : *Daucus carota*

Customer : Plant Therapy

ANALYSIS

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

Analyst : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2016-06-15

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.	
Tricyclene	3.16	917	0.03	0.02	935	0.84	Monoterpene
α -Thujene	3.25	923	0.02	10.84	959	0.94*	Monoterpene
α -Pinene	3.38	931	10.78	[10.84]	959	0.94*	Monoterpene
Camphene	3.63*	946	0.08	0.07	1008	1.16	Monoterpene
α -Fenchene	3.63*	946	[0.08]	0.01	1000	1.11	Monoterpene
Sabinene	4.06	972	0.07	0.06	1063	1.60	Monoterpene
β -Pinene	4.13	976	2.28	2.21	1047	1.47	Monoterpene
Myrcene	4.41	993	0.48	0.47	1121	2.11	Monoterpene
Δ 3-Carene	4.67	1009	0.01	tr	1098	1.87	Monoterpene
para-Cymene	5.05	1029	0.01	0.02	1215	3.21	Monoterpene
Limonene	5.08	1031	0.37	0.35	1146	2.40	Monoterpene
β -Phellandrene	5.11	1033	0.01	0.02	1151	2.47	Monoterpene
<i>cis</i> - β -Ocimene	5.27	1042	0.01	0.01	1194	2.97*	Monoterpene
<i>trans</i> - β -Ocimene	5.45	1052	0.01	0.01	1210	3.14	Monoterpene
γ -Terpinene	5.63	1062	tr	[0.01]	1194	2.97*	Monoterpene
Terpinolene	6.10	1088	0.01	0.01	1230	3.43	Monoterpene
Linalool	6.67	1114	0.04	0.40	1499	7.68*	Monoterp. alcohol
Geraniol	12.04	1270	1.77	1.77	1787	19.73	Monoterp. alcohol
Eugenol	17.35	1363	0.14	0.11	2067	36.51	Phenylpropanoid
Daucene	17.60	1367	1.91	2.10	1446	6.66	Sesquiterpene
Daucene isomer	18.09	1374	0.35	[0.40]	1499	7.68*	Sesquiterpene
β -Elemene	18.58	1382	0.04	10.59	1536	8.61*	Sesquiterpene
β -Caryophyllene	20.38	1408	10.53	[10.59]	1536	8.61*	Sesquiterpene
<i>trans</i> - α -Bergamotene	21.79	1425	0.40	0.51	1539	8.70	Sesquiterpene
α -Humulene	22.96	1439	0.47	0.88	1593	10.37*	Sesquiterpene
Dauca-5,8-diene	23.47	1445	0.49	[0.88]	1593	10.37*	Sesquiterpene
<i>trans</i> - β -Farnesene	24.20	1454	1.19	1.25	1627	11.55	Sesquiterpene
Amorpha-4,11-diene?	24.41	1457	0.63	0.63	1619	11.15	Sesquiterpene
α -Amorphene	25.10	1465	0.07	0.12	1610	10.85	Sesquiterpene
<i>ar</i> -Curcumene	25.63	1471	0.20	2.01	1706	15.04*	Sesquiterpene
Isodaucene	26.19	1478	0.60	0.44	1633	11.83	Sesquiterpene
4- <i>epi-cis</i> -Dihydroagarofuran	26.68	1484	0.44				Sesquiterp. ether
Germacrene A	26.80	1486	0.19	0.21	1691	14.42	Sesquiterpene
α -Muurolene	27.09	1489	0.05	0.04	1638	12.06	Sesquiterpene
α -Zingiberene	27.41	1493	0.71	0.67	1663	13.15	Sesquiterpene
γ -Cadinene	28.21	1503	0.11	0.12	1672	13.54	Sesquiterpene
β -Bisabolene	28.45	1506	1.13	1.21	1669	13.41	Sesquiterpene
Methyl (<i>E</i>)-isoeugenol	29.08	1514	0.13	0.16	2106	37.87	Phenylpropanoid
β -Sesquiphellandrene	29.80	1524	1.69	[2.01]	1706	15.04*	Sesquiterpene
α -Agarofuran	30.19	1530	0.21	0.20	1772	18.83	Sesquiterp. ether

<i>trans</i> - α -Bisabolene	30.77	1538	0.21	[2.01]	1706	15.04*	Sesquiterpene
α -Elemol	32.69	1564	3.16	3.10	2005	33.85	Sesquiterp. alcohol
Caryophyllene oxide	32.77	1565	0.12	0.15	1854	24.05	Sesquiterp. ether
(<i>E</i>)-Nerolidol	33.52	1575	0.18	0.19	1998	33.38	Sesquiterp. alcohol
Carotol	35.29*	1599	35.91	34.09	1922	28.86	Sesquiterp. alcohol
Unknown, not seen in MS (carrot)	35.29*	1599	[35.91]	1.93	1939	29.86	Oxygenated sesquiterp.
Muuroala-4,10(14)-dien-1- β -ol	35.65	1605	0.30	0.35	2049	35.90	Sesquiterp. alcohol
10-epi- γ -Eudesmol	36.00	1614	2.35	2.33	1991	32.95	Sesquiterp. alcohol
γ -Eudesmol	36.86	1634	1.69	1.72	2075	36.79	Sesquiterp. alcohol
Daucol	37.40	1648	0.33	0.25	2187	40.24	Sesquiterp. alcohol
β -Eudesmol	37.89	1659	10.34	7.15	2116	38.21	Sesquiterp. alcohol
α -Eudesmol	38.08	1664	3.28	6.59	2121	38.39	Sesquiterp. alcohol
Drimenol	41.83	1770	0.43	0.43	2366	44.51	Sesquiterp. alcohol
Total identified			95.96%	93.87%			

*: 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 : 1.4940 \pm 0.0003 (20 °C)

CONCLUSION

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



