



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: J50101

ESSENTIAL OIL: JUNIPER BERRY ORGANIC
BOTANICAL NAME: JUNIPERUS COMMUNIS
ORIGIN: BULGARIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF JUNIPER BERRY ORGANIC OIL	%
α -PINENE	42.6
MYRCENE	16.4
SABINENE	8.6
GERMACRENE D	4.2
LIMONENE	4.2
β -PINENE	2.8
β -CARYOPHYLLENE + β -CEDRENE	2.3
GERMACRENE B	1.7
α -HUMULENE	1.5
TERPINEN-4-ol	1.2
δ -CADINENE	1.0
TERPINOLENE	1.0

Comments from Robert Tisserand: Clean, sweet, resinous odor profile. All eleven key ISO constituents are within range.

Date : August 4, 2017

SAMPLE IDENTIFICATION

Internal code : 17H01-PTH1-1-DM

Customer identification : Juniper Berry Organic - Bulgaria - J5010176R

Type : Essential oil

Source : *Juniperus communis*

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 : 2017-08-04

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	3.25	919	0.10	0.10	924	0.92	Monoterpene
α -Thujene	3.34	924	1.01	2.54	959	1.07	Monoterpene
α -Pinene	3.51	934	42.62	41.13	956	1.06	Monoterpene
α -Fenchene	3.71	946	0.03	0.06	988	1.20	Monoterpene
Camphene	3.73	948	0.30	0.29	997	1.25	Monoterpene
Thuja-2,4(10)-diene	3.82	953	0.05	8.62	1056	1.73*	Monoterpene
Sabinene	4.19	975	8.55	[8.62]	1056	1.73*	Monoterpene
β -Pinene	4.24	978	2.77	2.71	1039	1.57	Monoterpene
Myrcene	4.55	996	16.35	16.15	1104	2.28	Monoterpene
Δ 3-Carene	4.79*	1009	0.33	0.20	1081	2.00	Monoterpene
α -Phellandrene	4.79*	1009	[0.33]	0.09	1097	2.18	Monoterpene
α -Terpinene	4.97	1020	0.55	0.82	1123	2.33*	Monoterpene
meta-Cymene	5.17	1031	0.23	[0.82]	1123	2.33*	Monoterpene
Limonene	5.22*	1033	4.50	4.16	1141	2.56	Monoterpene
para-Cymene	5.22*	1033	[4.50]	0.43	1202	3.34	Monoterpene
β -Phellandrene	5.24	1034	0.61	0.76	1146	2.62*	Monoterpene
1,8-Cineole	5.31	1038	tr	[0.76]	1146	2.62*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.38	1042	tr	0.94	1185	3.11*	Monoterpene
<i>trans</i> - β -Ocimene	5.56	1052	0.05	0.04	1198	3.28	Monoterpene
γ -Terpinene	5.75	1062	0.97	[0.94]	1185	3.11*	Monoterpene
<i>cis</i> -Sabinene hydrate	6.09	1081	0.05	0.06	1399	6.17	Monoterp. alcohol
Terpinolene	6.23	1088	1.02	1.00	1221	3.57	Monoterpene
para-Cymenene	6.45	1100	0.06	0.04	1364	5.64	Monoterpene
α -Pinene oxide	6.56	1104	0.03	0.02	1306	4.77	Monoterp. ether
Linalool	6.73	1110	0.17	0.38	1485	7.84*	Monoterp. alcohol
Nonanal	6.82	1114	0.02	0.02	1345	5.35	Aliphatic aldehyde
<i>cis</i> -para-Menth-2-en-1-ol	7.26	1130	0.03	[0.38]	1485	7.84*	Monoterp. alcohol
α -Campholenal	7.29	1131	0.06				Monoterp. aldehyde
<i>trans</i> -Pinocarveol	7.65	1144	0.06	0.06	1562	9.85	Monoterp. alcohol
<i>trans</i> -Verbenol	7.79	1149	0.04	0.79	1620	11.95*	Monoterp. alcohol
Borneol	8.69	1182	0.05	[0.79]	1620	11.95*	Monoterp. alcohol
Terpinen-4-ol	8.86	1189	1.22	3.63	1524	8.77*	Monoterp. alcohol
Myrtenal	9.42	1205	0.05	[3.63]	1524	8.77*	Monoterp. aldehyde
α -Terpineol	9.52	1208	0.20	[0.79]	1620	11.95*	Monoterp. alcohol
Verbenone	9.89	1216	0.04	[0.79]	1620	11.95*	Monoterp. ketone
Carvacrol methyl ether	10.89	1238	0.07	0.76	1528	8.85*	Monoterp. ether
Methyl citronellate	11.97	1262	0.12	0.14	1500	8.22	Monoterp. ester
Bornyl acetate	12.98	1284	0.24	0.18	1497	8.13	Monoterp. ester
δ -Elemene	15.40	1326	0.01	0.01	1424	6.57	Sesquiterpene
α -Cubebene	16.08	1336	0.56	0.65	1413	6.38*	Sesquiterpene
α -Terpinyl acetate	16.74	1346	0.06	[0.79]	1620	11.95*	Monoterp. ester

Citronellic acid	16.97	1350	0.04	0.05	2170	40.15	Monoterp. acid
α -Ylangene	17.33	1355	0.05	[0.65]	1413	6.38*	Sesquiterpene
α -Copaene	17.80	1363	0.35	0.36	1441	6.84	Sesquiterpene
β -Cubebene	18.78	1377	0.05	0.04	1478	7.70	Sesquiterpene
β -Elemene	19.06	1382	0.67	[0.76]	1528	8.85*	Sesquiterpene
Longifolene	19.65	1391	0.18	[0.38]	1485	7.84*	Sesquiterpene
α -Gurjunene	19.76	1392	0.03	0.02	1473	7.59	Sesquiterpene
β -Caryophyllene	20.76*	1406	2.32	[3.63]	1524	8.77*	Sesquiterpene
β -Cedrene	20.76*	1406	[2.32]	0.03	1505	8.31	Sesquiterpene
Thujopsen	21.63	1416	0.05	0.06	1543	9.19	Sesquiterpene
γ -Elemene	22.00	1421	0.15	0.11	1572	10.25	Sesquiterpene
<i>cis</i> - β -Farnesene	23.10	1434	0.05	1.60	1585	10.71*	Sesquiterpene
α -Humulene	23.56	1440	1.52	[1.60]	1585	10.71*	Sesquiterpene
<i>trans</i> - β -Farnesene	24.67	1453	0.51	0.36	1613	11.69	Sesquiterpene
γ -Muurolene	25.21	1459	0.09	0.08	1590	10.91	Sesquiterpene
Germacrene D	25.85	1467	4.23	4.39	1629	12.24*	Sesquiterpene
β -Selinene	26.38	1473	0.14	[4.39]	1629	12.24*	Sesquiterpene
Bicyclgermacrene	27.02*	1481	0.34	0.23	1640	12.70	Sesquiterpene
α -Selinene	27.02*	1481	[0.34]	[4.39]	1629	12.24*	Sesquiterpene
Valencene	27.80	1491	0.27	0.27	1654	13.24	Sesquiterpene
α -Muurolene	27.93	1492	0.18	0.24	1650	13.01	Sesquiterpene
γ -Cadinene	28.85	1504	0.28	0.30	1674	14.25	Sesquiterpene
δ -Cadinene	29.52	1513	1.04	1.06	1679	14.51	Sesquiterpene
Selina-3,7(11)-diene	30.63	1528	0.05	0.06	1687	14.88	Sesquiterpene
α -Cadinene	31.00	1534	0.05	0.06	1703	15.71	Sesquiterpene
Germacrene B	32.20	1550	1.69	1.70	1726	16.90	Sesquiterpene
Caryophyllene oxide	33.92*	1574	0.23	0.07	1853	24.58	Sesquiterp. ether
Spathulenol	33.92*	1574	[0.23]	0.06	2027	35.20	Sesquiterp. alcohol
(<i>E</i>)-Nerolidol	33.92*	1574	[0.23]	0.03	1991	33.65	Sesquiterp. alcohol
τ -Cadinol	37.61	1645	0.05	0.05	2076	37.33	Sesquiterp. alcohol
τ -Muurolol	37.72	1648	0.04	0.04	2088	37.68	Sesquiterp. alcohol
α -Muurolol	37.85	1651	0.01	0.02	2104	38.16	Sesquiterp. alcohol
α -Cadinol	38.17	1659	0.10	0.11	2128	38.91	Sesquiterp. alcohol
meta-Camphorene	47.00	1950	0.75	0.82	2151	39.58	Diterpene
para-Camphorene	47.88	1985	0.27	0.28	2192	40.77	Diterpene
Total identified			98.96%	99.28%			

*: 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

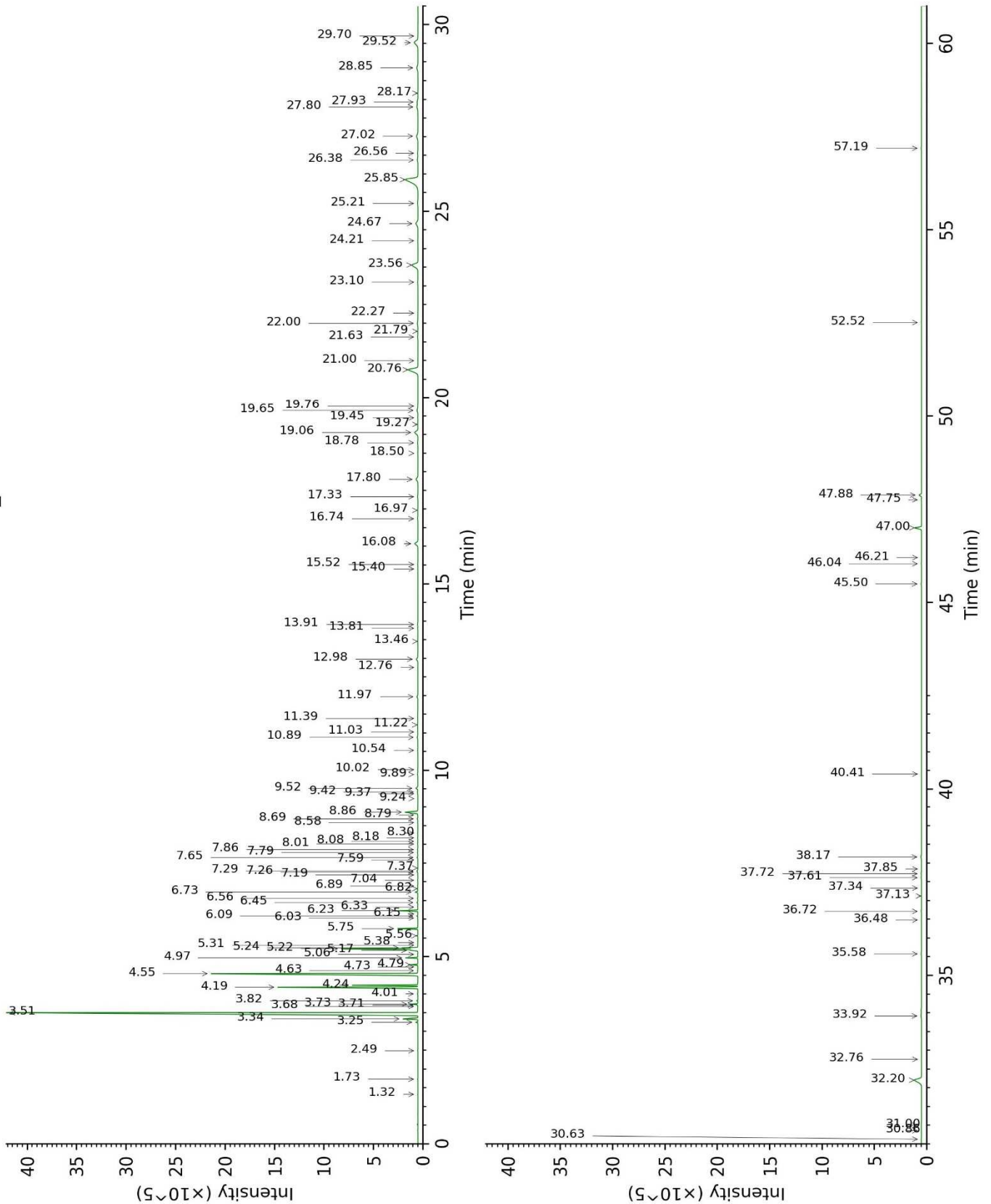
Physical aspect : Faintly yellow liquid

Refractive index : 1.4745 ± 0.0003 (20 °C)

CONCLUSION

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

17H01-PTH1-1-DM_BP5



17H01-PTH1-1-DM_WAX

