



Healing Body, Mind, and Spirit
with Pure Essential Oils Since 1995

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Certificate of Analysis: Balsam Fir, Abies balsamea Canadensis, Canada.

Batch No: CA-15G10-ALK1-1-AS

Analysis date: 2015-07-14

ANALYSIS

Method: PC-PA-001-14G14, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

OTHER DATA

Physical aspect: Clear liquid

Refractive Index: 1.4738 ± 0.0003 (20 °C)

CHEMOTYPES

- High Δ^3 -carene (>10%; likely characteristic of Eastern Canada)^{1,2}
- Low thymol (<0.25%)¹

IDENTIFIED COMPOUNDS

Identification	Colonne: BP5			Colonne: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
Santene	2.12	869	1.89	1.92	908	0.80	Normonoterpene
Tricyclene	2.65	910	0.88	0.87	931	0.91	Monoterpene
α -Thujene	2.75	916	0.13	16.25	956	1.03*	Monoterpene
α -Pinene	2.87	923	15.84	[16.25]	956	1.03*	Monoterpene
Camphene	3.11*	939	5.96	5.83	1008	1.29	Monoterpene
α -Fenchene	3.11*	939	[5.96]	0.06	1001	1.22	Monoterpene
Thuja-2,4(10)-diene	3.19	944	0.08	0.08	1064	1.79*	Monoterpene
β -Pinene	3.62*	971	35.59	35.98	1051	1.68	Monoterpene
Sabinene	3.62*	971	[35.59]	[0.08]	1064	1.79*	Monoterpene
Benzaldehyde	3.62*	971	[35.59]	0.03	1444	7.45	Simple phenol
Myrcene	3.87	987	1.72	1.71	1116	2.36	Monoterpene
Δ^3 -Carene	4.14*	1003	13.16	13.17	1095	2.10	Monoterpene
α -Phellandrene	4.14*	1003	[13.16]	0.19	1107	2.25	Monoterpene
α -Terpinene	4.29	1011	0.18	0.19	1120	2.42	Monoterpene
Limonene	4.54*	1026	12.70	6.47	1139	2.66	Monoterpene
β -Phellandrene	4.54*	1026	[12.70]	5.98	1146	2.75	Monoterpene
γ -Terpinene	5.04	1054	0.29	0.28	1185	3.24	Monoterpene
Isoterpinolene	5.42	1076	0.04	0.03	1214	3.66	Monoterpene
Terpinolene	5.50	1080	1.19	1.18	1219	3.73	Monoterpene
Fenchone	5.63	1087	0.10	0.09	1316	5.16	Monoterp. ketone
para-Cymenene	5.70	1092	0.10	0.04	1365	5.91	Monoterpene
Linalool	5.98	1105	0.05	6.99	1499	8.76*	Monoterp. alcohol
endo-Fenchol	6.30	1119	0.07	0.30	1506	9.00*	Monoterp. alcohol
Camphor	6.76	1140	0.15	0.13	1416	6.87	Monoterp. ketone
Borneol	7.49	1173	0.34	0.42	1610	12.79	Monoterp. alcohol
Terpinen-4-ol	7.63	1180	0.20	0.19	1520	9.45	Monoterp. alcohol
α -Terpineol	8.21	1201	0.78	0.71	1615	13.04*	Monoterp. alcohol

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Identification	Colonne: BP5			Colonne: WAX			Molecular Class
endo-Fenchyl acetate	8.48	1209	0.05	0.04	1396	6.43	Monoterp. ester
Piperitone	10.06	1251	0.13	[0.71]	1615	13.04*	Monoterp. ketone
Bornyl acetate	11.04	1277	7.09	[6.99]	1499	8.76*	Monoterp. ester
Thymol	12.94	1316	0.04	0.05	2100	39.60	Monoterp. alcohol
Longifolene	16.59	1380	0.20	0.11	1474	8.09	Sesquiterpene
β -Caryophyllene	17.45	1395	0.28	[0.30]	1506	9.00*	Sesquiterpene
α -Humulene	19.95	1428	0.12	0.07	1569	11.09	Sesquiterpene
β -Bisabolene	25.09	1495	0.29	0.30	1644	14.47	Sesquiterpene
Total identified			99.64%	99.66%			

*: Two or more compounds are coeluting on this column

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

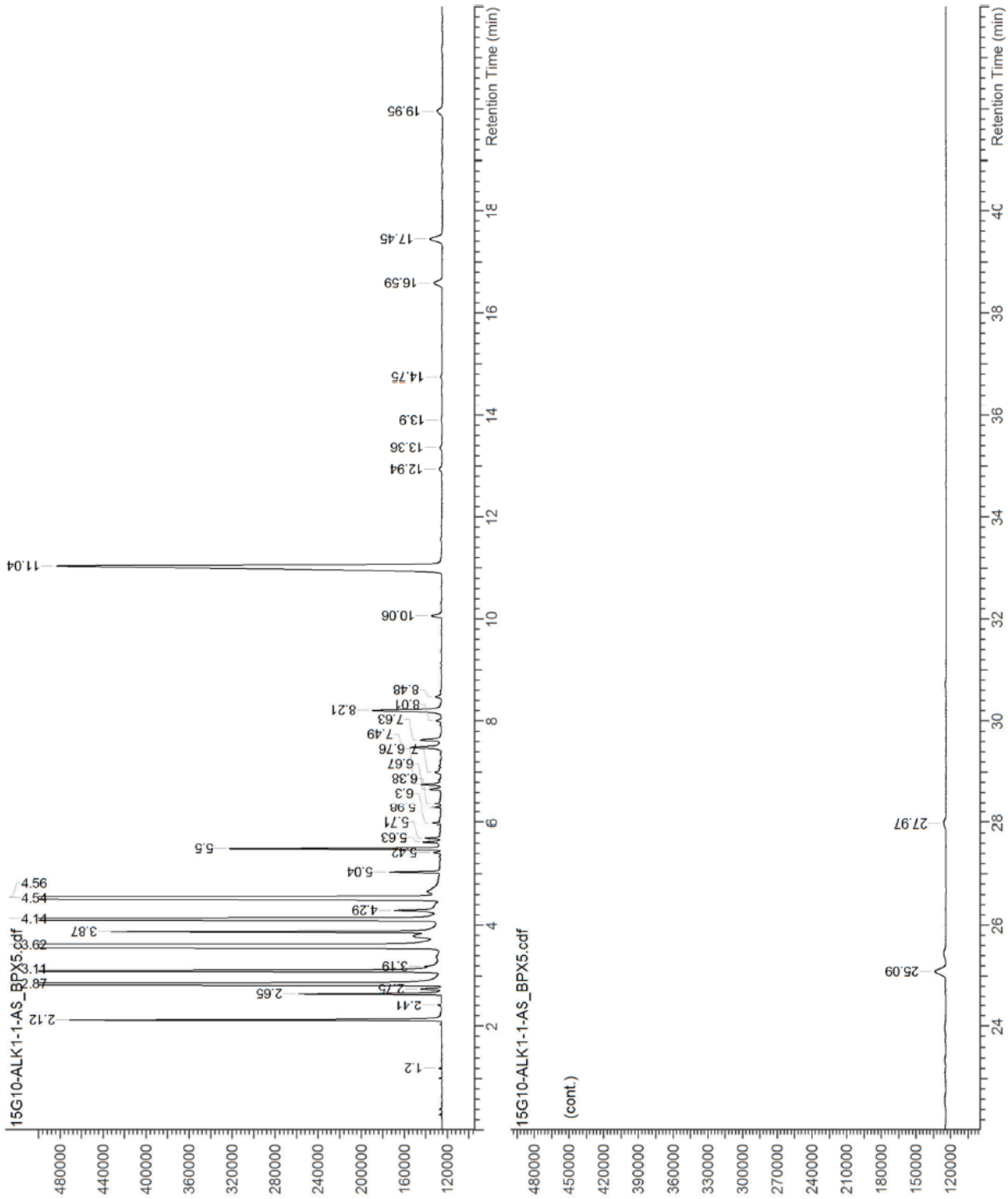
Note: no correction factor was applied

(continued)



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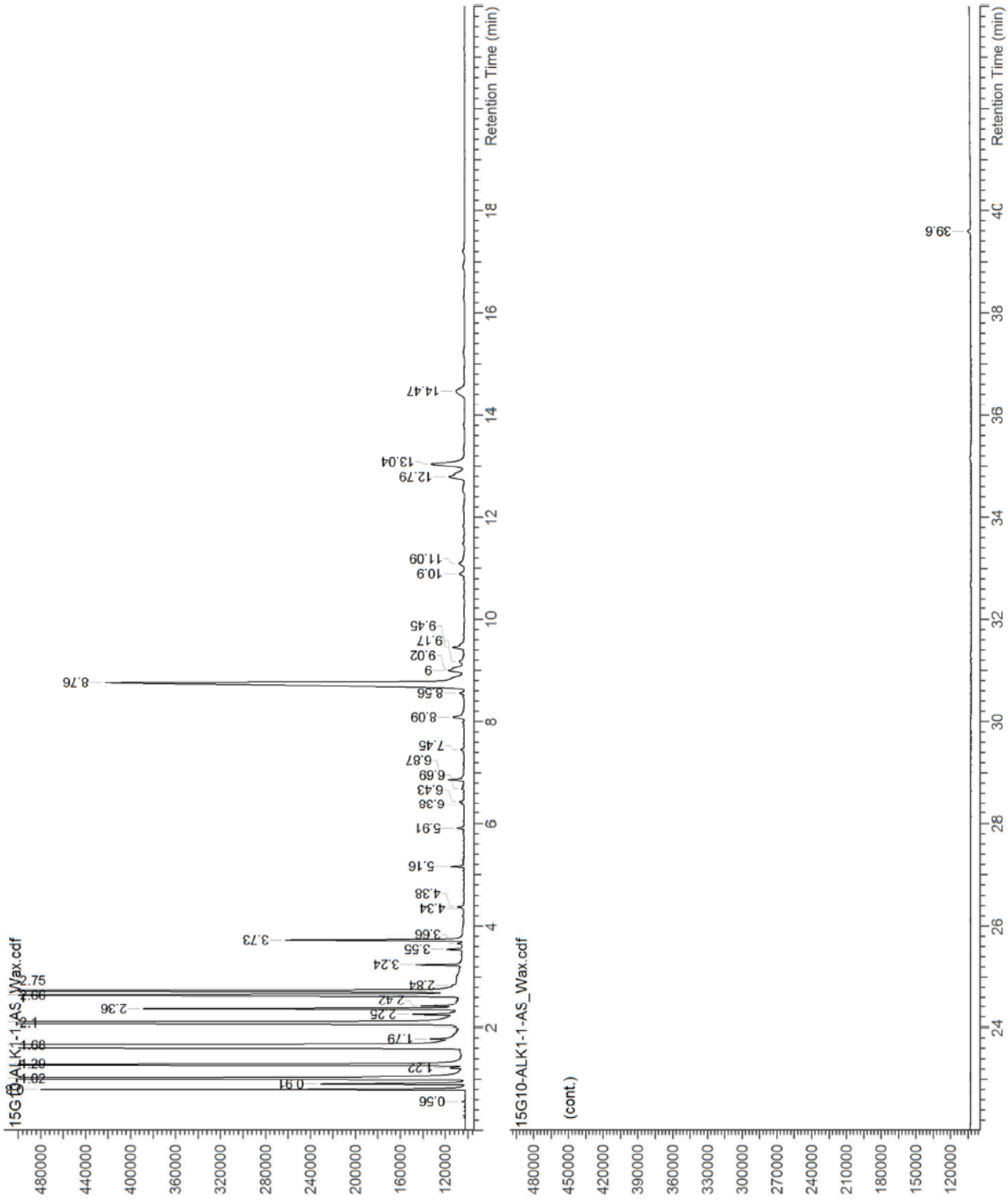


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