

Customer :

**LearningAboutEOs.com
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Sample nature : ESSENTIAL OIL
Botanical name : MELALEUCA ALTERNIFOLIA
Reference name : TEATREE
Batch number : 1
Origin :
Part: LEAF
Pyrenessences reference : 8549

Date of reception : 03/07/2013 **Date analysis :** 07/07/2013
Packaging : Brown flask of 10 ml - ambient temperature
Wanted analysis : Complete analysis
Shelf life in our laboratory 1 an

Comments and Conclusions :

**⇒ BATCH IN COMPLIANCE WITH THE NORM OF MELAEUCA
TERPINENE-4-OL ESSENTIAL OIL: NF ISO 4730**

Report validated by :

Daniel Dantin



ORGANOLEPTICS CHARACTERISTICS (method I-ANA-008-B*)

Aspect : Limpid Liquide

Color : Pale yellow

Odour : Caractéristique

PHYSICALS CHARACTERISTICS

	METHOD	EO TEA TREE BATCH N° 1	NORM NF ISO 4730	
			Minimum	Maximum
Specific gravity 20 °C	I-ANA-003-A*	0,899	0,885	0,906
Specific gravity 15 °C	I-ANA-003-A*	0,903		
Refractive index 20°C	NF ISO 280	1,478 8	1,475 0	1,482 0
Optical rotation 20°C	NF ISO 592	+ 9 °	+ 5 °	+ 15 °
Miscibility in éthanol 85 %	NF ISO 875	1,1 volume of alcohol 80 %	< 2 volumes alcohol 85 %	
Flash point : SETAFLASH	FD ISO/TR 11018	58,4 °C	59 °C	

- Interns Methods

GAS CHROMATOGRAPHY (norm NF ISO 11024)

Conditions :

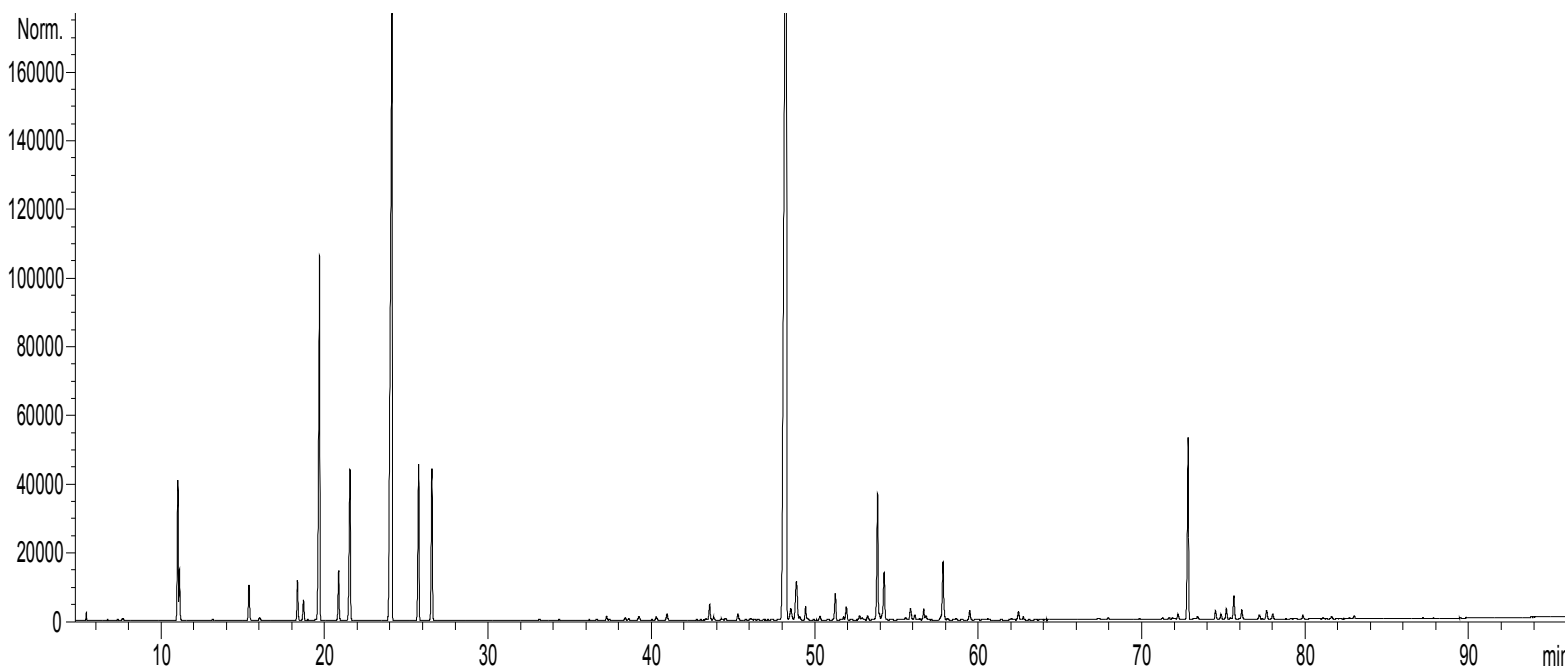
- CPG/SM and CPG/FID (GC : 5890 - SM : 5970 HEWLETT PACKARD)
- Column : HP INNOWAX polar : 60 m × 0,25 mm × 0,5 µm
- Programmation : 6 min to 60°C – 2°C/min→250°C – 10 min to 250°C
- Carrier gas : He 30 psi/FID ; 23 psi/MS
- Dilution: 10 % in Hexane
- Mass : 30 à 350
- Sample injection : 1 µL

Mass range : 30 to 350, Oil components are identified by a combination of retention times (our own database) and mass spectra library NIST 75 000 records,

Percentages are calculated from GC/FID peaks areas without using corrections factors,

Chromatographic profile (GC/FID) :

FID1 A, (HARRIS\MA18549.D)



Identification results 1 – TEA TREE BATCH N° 1

Peak	RT (min)	Compound	%	Norm (%)	Allergens (%)	Fonction
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1	5,4	ACETONE	0,07			CA
2	7,3	ISOVALERALDEHYDE	0,01			ALD
3	7,7	ETHANOL	0,04			OLA
4	11,0	α-PINENE	2,40	1,0 – 6,0		M
5	11,1	α-THUYENE	0,77			M
6	13,2	CAMPHENE	0,02			M
7	15,4	β-PINENE	0,66			M
8	16,0	SABINENE	0,05	Tr – 3,5		M
9	18,3	β-MYRCENE	0,74			M
10	18,7	α-PHELLANDRENE	0,37			M
11	19,0	ψ-LIMONENE	0,02			M
12	19,4	1,4-CINEOLE	0,03			O
13	19,7	α-TERPINENE	8,17	5,0 – 13,0		M
14	20,9	LIMONENE	0,94	0,5 – 1,5	0,94	M
15	21,6	1,8-CINEOLE	3,47	Tr – 15,0		O
16	24,1	γ-TERPINENE	18,95	10,0 – 28,0		M
17	25,8	p-CYMENE	3,03	0,5 – 8,0		M
18	26,6	TERPINOLENE	3,04	1,5 – 5,0		M
19	29,5	TERPENIC COMPOUND	0,01			CT
20	33,2	3-HEXEN-1-OL	0,02			OLA
21	34,4	MENTHATRIENIC COMPOUND	0,01			M
22	36,7	MENTHATRIENIC COMPOUND	0,02			M
23	37,3	α-p-DIMETHYLSTYRENE	0,09			M
24	37,4	MENTHATRIENIC COMPONENT	0,01			M
25	38,4	α-CUBEBENE	0,05			S
26	38,6	Trans-THUYANOL	0,02			OLT
27	39,3	FENCHYL ACETATE	0,08			ET
28	40,0	BICYCLOELEMENE	0,02			S
29	40,4	ISOLEDENE	0,08			S
30	41,0	α-COPAENE	0,14			S
31	42,8	DILL ETHER	0,01			E
32	43,4	SESQUITERPENE	0,04			S
33	43,7	α-GURJUNENE	0,38			S
34	43,8	LINALOOL	0,06		0,06	OLA
35	44,4	Cis-THUYANOL	0,03			OLT
36	44,6	1-OCTANOL	0,04			OLA
37	45,3	Trans-p-MENTH-2-EN-1-OL	0,13			OLT
38	45,8	TERPINENE-1-OL	0,01			OLT
39	46,1	SESQUITERPENE	0,05			S
40	46,6	BORNYL ACETATE + FENCHOL	0,02			OLT
41	47,4	β-ELEMENE	0,02			S
42	48,2	TERPINENE-4-OL	38,23	30,0 – 48,0		OLT
43	48,4	β-CARYOPHYLLENE	0,35			S
44	48,5	AROMADENDRENE ISOMER	0,39			S
45	48,8	AROMADENDRENE	1,25	Tr – 3,0		S

Identification results 2 – TEA TREE BATCH N° 1

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SIRET 511 930 869 00017 - Code APE 7490B

Peak	RT (min)	Compound	%	Norm (%)	Allergens (%)	Fonction
46	49,1	SESQUITERPENE	0,06			S
47	49,3	Cis-p-MENTH-2-EN-1-OL	0,28			OLT
48	49,5	Cis-β-TERPINEOL	0,04			OLT
49	50,3	CADINA-3,5-DIENE	0,08			S
50	50,7	SESQUITERPENE	0,02			S
51	51,2	ALLO-AROMADENDRENE	0,59			S
52	51,8	ALLO-AROMADENDRENE ISOMER	0,07			S
53	51,9	ZONARENE	0,29			S
54	52,1	δ-TERPINEOL	0,02			OLT
55	52,7	α-HUMULENE	0,11			S
56	53,0	Cis-PIPERITOL	0,06			OLT
57	53,2	NERAL	0,09		0,09	ALD
58	53,7	γ-MUUROLENE	0,03			S
59	53,8	α-TERPINEOL	2,76	1,5 – 8,0		OLT
60	53,9	CALARENE ISOMER	0,10			S
61	54,0	CALARENE	0,10			S
62	54,2	LEDENE	1,09	Tr – 3,0		S
63	54,7	SESQUITERPENE	0,03			S
64	55,1	GERMACRENE D	0,02			S
65	55,3	SESQUITERPENE	0,01			S
66	55,5	CUBENENE ISOMER	0,08			S
67	55,8	α-MUUROLENE + β-SELINENE	0,29			S
68	56,0	α-SELINENE	0,07			S
69	56,1	GERANIAL	0,05		0,05	ALD
70	56,4	SESQUITERPENE	0,04			S
71	56,7	BICYCLOGERMACRENE	0,24			S
72	56,9	Trans-PIPERITOL	0,09			OLT
73	57,6	1-DECANOL	0,05			OLA
74	57,8	δ-CADINENE	1,49	Tr – 3,0		S
75	58,1	γ-CADINENE	0,03			S
76	58,6	SESQUITERPENE Mw=202	0,03			S
77	59,0	SESQUITERPENE	0,02			S
78	59,4	CADINA-1,4-DIENE	0,22			S
79	59,8	NEROL	0,02			S
80	60,5	SESQUITERPENE Mw=202	0,03			S
81	62,0	Trans-CARVEOL	0,03			OLT
82	62,4	GERANIOL	0,08		0,08	OLA
83	62,5	CALAMENENE	0,11			S
84	62,8	p-CYMENE-8-OL	0,06			OLAR
85	67,3	CALACORENE	0,03			S
86	67,4	OXYGENED COMPOUND Mw=220	0,02			COX
87	68,0	PALUSTROL	0,05			SOLC
88	69,9	SESQUITERPENOL	0,03			SOLC
89	71,3	CARYOPHYLLENE EPOXIDE	0,06			O
90	71,7	METHYLEUGENOL	0,06			PE

Identification results 3 – TEA TREE BATCH N° 1

Peak	RT (min)	Compound	%	Norm (%)	Allergens (%)	Fonction
91	71,9	Épi-GLOBULOL	0,05			SOLC
92	72,0	SESQUITERPENOL	0,03			SOLC
93	72,2	SESQUITERPENOL	0,13			SOLC
94	72,8	NEROLIDOL	3,95			SOLA
95	73,3	GERMACRADIENOL ISOMER	0,06			SOLC
96	73,4	LEDOL	0,07			SOLC
97	74,5	GLEENOL	0,19			SOLC
98	74,9	EPI-CUBENOL	0,12			SOLC
99	75,2	CUBENOL	0,26			SOLC
100	75,4	ELEMOL	0,04			SOLC
101	75,6	GLOBULOL	0,59	Tr – 1,0		SOLC
102	76,1	VIRIDIFLOROL	0,27	Tr – 1,0		SOLC
103	77,2	EUDESMA-5-EN-11- α -OL	0,11			SOLC
104	77,6	ROSIFOLIOL	0,20			SOLC
105	78,0	SPATHULENOL	0,13			SOLC
106	79,7	POLYOXYGENED COMPOUND	0,09			COX
107	81,1	α -MUUROL	0,03			SOLC
108	81,6	CADINOL ISOMER	0,05			SOLC
109	82,0	SESQUITERPENOL	0,02			SOLC
110	82,7	ELEMICINE	0,03			PE
111	83,0	ISOSPATHULENOL	0,08			SOLC
112	84,6	SESQUITERPENOL	0,02			SOLC
		TOTAL	99,99		1,22	

Classification by fonction : TEA TREE 1

CODE	FONCTION	NUMBER	%
TERPENES			
M	Monoterpene	17	39,29
S	Sesquiterpene	38	7,72
ALCOHOLS			
OLA	Aliphatic alcohol	7	0,64
OLT	Terpenic alcohol	13	41,72
OLAR	Aromatic alcohol	1	0,06
ESTERS			
ET	Terpenic ester	1	0,08
KETONES			
CA	Aliphatic ketone	1	0,07
CT	Terpenic ketone	1	0,01
ALDEHYDES			
ALD	Aldehyde	3	0,15
OXYDES			
O	Oxyde	3	3,56
PHENOL			
PE	Phenol Ether	2	0,09
SESQUITERPENOLS			
SOLA	Aliphatic Sesquiterpenol	1	3,95
SOLC	Cyclic Sesquiterpenol	21	2,53
COMPOUNDS			
COX	Oxygenated compound	2	0,11
E	Ether	1	0,01
TOTAL		112	99,99