



PLANT THERAPY

100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: M30101

ESSENTIAL OIL: MAY CHANG
BOTANICAL NAME: LITSEA CUBEBA
ORIGIN: CHINA

KEY CONSTITUENTS IN THIS BATCH OF MAY CHANG OIL	%
GERANIAL	39.0
NERAL	30.9
LIMONENE	12.1
CITRONELLAL	1.5
β -CARYOPHYLLENE	1.4
LINALOOL	1.4
GERANIOL	1.3
α -PINENE	1.3
5-HEPTEN-2-ONE, 6-METHYL	1.2
1,8-CINEOLE + β -PHELLANDRENE	1.2
METHYL HEPTENONE	1.2
NEROL	0.6
CITRONELLOL	0.3

Comments from Robert Tisserand: Great odor profile. Three of the ten key constituents for the ISO standard are slightly low, though none of these concern me.

CUSTOMER :

**PLANT THERAPY
126 Locust Street South
Twin Falls, ID 83 301
USA**

Sample nature : ESSENTIAL OIL
Botanical species : LITSEA CUBEBA
Reference name : LITSEA
Batch number : M30101
Origin : CHINA
Part: FRUIT
Pyrenessences reference : D605
Date of reception : 04/30/2015
Date analysis : 05/12/2015
Packaging : Amber flask of 5 ml – ambient temperature
Analysis : Classic

Validated report by :

Daniel DANTIN



GAS CHROMATOGRAPHY norm NF ISO 11024

Analysis conditions :

CPG 6890 / MS 5973 AGILENT – Column : VF WAX polar 60 m × 0,25 mm × 0,5 µm

CPG 6890 FID AGILENT - Column : VF WAX polar 60 m × 0,25 mm × 0,5 µm

Temperature program : 6 mn to 60 °C -2 °C/mn→250 °C - 20mn to 250 °C

Carrier gas He : 23 psis/MS – 30 psis/FID

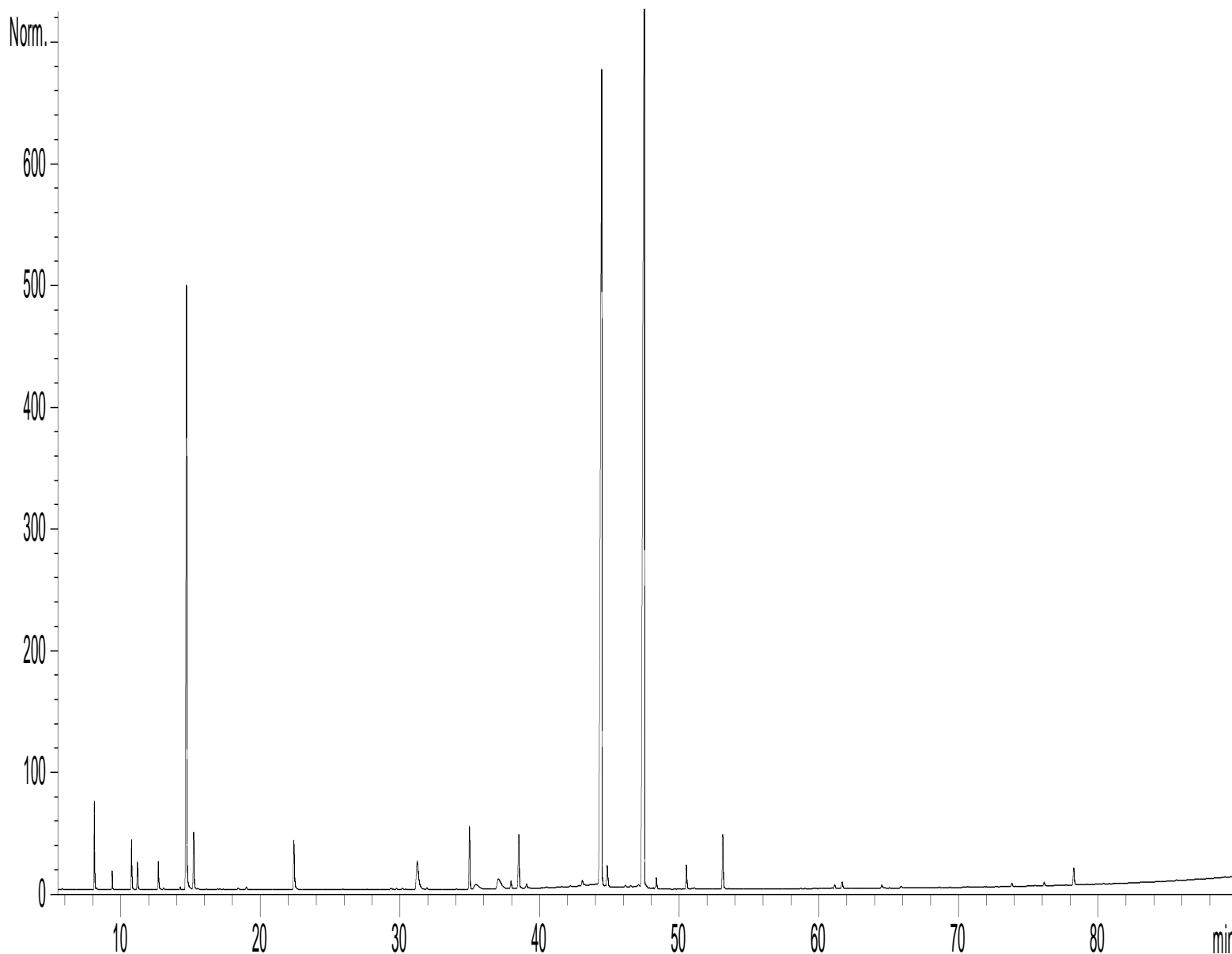
Sample injection / split : 1 µl of 10 % solution in hexane,

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

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

Chromatographic profile (GC/FID)

FID1 A, (Z:\PLANTHER\LCB2D605.D)



Identification results 1 : LITSEA CHINA BATCH M30101

Peak	RT (min)	Compound name	%	Norm (%)	Allergens (%)
1	5,2	ACETONE	0,06		
2	5,8	CYCLOHEXANE METHYLPROPYL	0,02		
3	6,9	1,5-HEPTADIENE, 2,6-DIMETHYL	0,01		
4	7,8	TRICYCLENE	0,01		
5	8,1	α-PINENE	1,27	< 1,5	
6	8,3	α-THUYENE	0,04		
7	9,4	CAMPHENE	0,30		
8	10,8	β-PINENE	0,89		
9	11,2	SABINENE	0,49		
10	12,7	β-MYRCENE	0,56		
11	13,1	α-PHELLANDRENE	0,03		
12	13,7	α-TERPINENE	0,01		
13	14,2	2,3-DEHYDRO-1,8-CINEOLE	0,06		
14	14,7	LIMONENE	12,12	9 - 15	12,12
15	15,2	1,8-CINEOLE + β-PHELLANDRENE	1,21		
16	15,5	MENTHATRIENE ISOMER	0,03		
17	16,1	Cis-β-OCIMENE	0,02		
18	17,0	γ-TERPINENE	0,02		
19	17,1	Trans-β-OCIMENE	0,02		
20	17,3	MENTHATRIENE ISOMER	0,02		
21	18,4	p-CYMENE	0,05		
22	19,0	TERPINOLENE	0,06		
23	22,4	5-HEPTEN-2-ONE, 6-METHYL	1,21	1,8 - 3	
24	23,3	5-HEPTANAL, 2,6-DIMETHYL-	0,01		
25	24,9	PINENE EPOXIDE	0,01		
26	25,9	ANISALDEHYDE TRIMETHYL Mw=150	0,02		
27	27,0	PERILLENE	0,01		
28	27,3	Trans-p-MENTHANE-3,8-DIOL	0,01		
29	27,6	LINALOL cis-OXIDE	0,02		
30	29,3	LIMONENE Cis-1,2-EPOXIDE	0,05		
31	29,5	5-HEPTEN-2-OL, 6-METHYL-	0,02		
32	29,8	LIMONENE trans-1,2-EPOXIDE	0,02		
33	29,8	Trans-THUYANOL	0,01		
34	30,2	LINALOL Trans-OXIDE	0,04		
35	30,4	TERPINOLENE, 4,8-EPOXIDE	0,01		
36	31,2	CITRONELLAL	1,50	< 1,5	
37	31,9	α-COPAENE	0,04		
38	33,4	ISONERAL	0,01		
39	33,8	TERPENIC EPOXIDE	0,02		
40	34,1	CAMPHOR	0,01		
41	35,0	LINALOOL	1,41	1,5 - 3	1,41
42	35,4	EPIPHOTOCITRAL A	0,53		
43	36,2	Trans-p-MENTH-2-EN-1-OL	0,01		
44	36,7	NEOISOPULEGOL	0,01		
45	37,1	EPIPHOTOCITRAL B + ISOPULEGOL	0,85		
46	37,4	BORNYL ACETATE	0,07		

Identification results 2 : LITSEA CHINA BATCH M30101

Peak	RT (min)	Compound name	%	Norm (%)	Allergens (%)
47	38,0	β-ELEMENE	0,20		
48	38,5	β-CARYOPHYLLENE	1,44		
49	39,1	TERPINENE-4-OL	0,12		
50	40,5	Cis-p-MENTHA-2,8-DIEN-1-OL	0,04		
51	41,6	TERPENIC EPOXIDE	0,02		
52	42,2	SESQUITERPENE	0,03		
53	43,1	α-HUMULENE	0,15		
54	44,5	NERAL	30,86	25 – 33	30,86
55	46,8	BORNEOL	0,05		
56	44,7	α-TERPINEOL	0,68		
57	45,6	GERANYL FORMIATE	0,02		
58	46,1	GERMACRENE D	0,06		
59	46,5	SESQUITERPENE	0,04		
60	47,1	α-MUUROLENE	0,06		
61	47,5	GERANIAL	38,95	38 - 45	38,95
62	47,6	BICYCLOGERMACRENE	0,17		
63	47,8	Cis-ISOPIPERITENOL	0,05		
64	48,0	Trans-ISOPIPERITENOL	0,05		
65	48,1	GERANYL ACETATE	0,04		
66	48,4	CITRONELLOL	0,32	0,5 – 1,5	0,32
67	48,8	δ-CADINENE	0,01		
68	49,6	METHYL SALICYLATE	0,01		
69	50,3	PERILLALDEHYDE	0,01		
70	50,5	NEROL	0,60	0,2 – 1,2	
71	50,9	Cis-ISOGERANIOL	0,03		
72	51,1	Trans-ISOGERANIOL	0,03		
73	52,9	Trans-CARVEOL	0,01		
74	53,1	GERANIOL	1,33	0,5 – 1,5	1,33
75	53,6	p-CYMENE-8-OL	0,01		
76	54,6	Cis-CARVEOL	0,01		
77	58,7	PIPERITENONE	0,01		
78	60,9	BENZYL ALCOHOL	0,02		0,02
79	61,1	ISOCARYOPHYLLENE EPOXIDE	0,10		
80	61,7	CARYOPHYLLENE EPOXIDE	0,20		
81	64,5	FURANIC COMPONENT	0,09		
82	64,7	HUMULENE, 6,7-EPOXY-	0,02		
83	65,9	CYCLOALKYL COMPONENT	0,06		
84	70,6	EUGENOL	0,02		0,02
85	73,8	CITRONELLIC ACID	0,08		
86	75,5	Trans-LIMONENE-1,2-DIOL	0,02		
87	76,1	NERIC ACID	0,11		
88	78,3	GERANIC ACID	0,47		
89	79,2	CARBOXYLIC ESTER Mw=168	0,02		
90	80,4	CARBOXYLIC ESTER Mw=168	0,04		
91	85,6	ALIPHATIC ESTER	0,02		
		TOTAL	99,88		85,03