PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: P20102

ESSENTIAL OIL: PATCHOULI
BOTANICAL NAME: POGOSTEMON CABLIN
ORIGIN: INDONESIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF PATCHOULI OIL	%
PATCHOULOL (PATCHOULI ALCOHOL)	32.5
α-BULNESENE	17.2
α-GUAIENE + β-ELEMENE	13.4
SEYCHELLENE	6.1
α-PATCHOULENE	4.6
β-CARYOPHYLLENE	3.1
ACIPHYLLENE (GUAI-4,11-DIENE)	2.6
β-PATCHOULENE	2.4
POGOSTOL	2.2
γ-GURJUNENE	1.8
POGOSTONE	1.0
NORPATCHOULENOL	0.6

Comments from Robert Tisserand: The odor profile is good for a fairly fresh Patchouli oil. In compliance with the ISO standard.

CUSTOMER :

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

Sample nature:	ESSENTIAL OIL
Botanical species:	POGOSTEMON CABLIN
Reference name:	PATCHOULI DARK
Batch number:	P20102
Origin:	INDONESIA
Part:	LEAF
Pyrenessences reference:	C273
Date of reception:	12/15/2014
Date analysis:	12/20/2014
Packaging:	Amber flask of 5 ml – ambient temperature
Analysis:	Classic

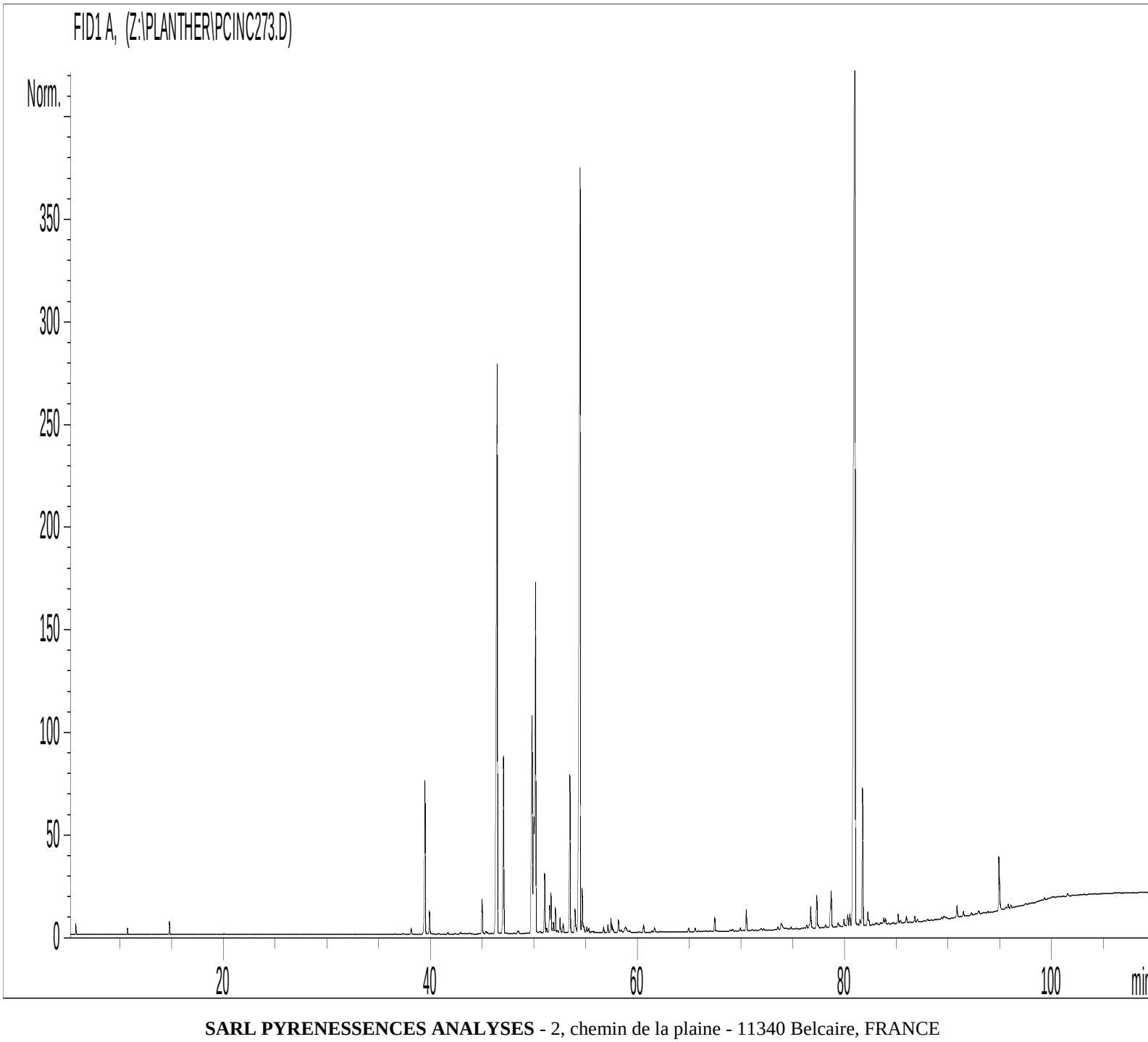
Validated report by : **Daniel DANTIN**

GAS CHROMATOGRAPHY norm NF ISO 11024

Analysis conditions :

CPG 7890 / MS 5975 – Column : VF WAX polar 60 m × 0,25 mm × 0,5 µm
CPG 6890 FID - Column : VF WAX polar 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)



Identification results 1 : PATCHOULI DARK INDONESIA BATCH P20102

Peak	RT (min)	Compound name	%	Norm (%)	Allergens (%)
1	5,8	ACETONE	0,07		
2	10,7	α-PINENE	0,06		
3	14,8	β-PINENE	0,15		
4	20,1	LIMONENE	0,01		0,01
5	38,1	δ-ELEMENE	0,09		
6	39,2	PENTADECANE	0,02		
7	39,5	**β-PATCHOULENE**	**2,40**	**1,8 – 3,5**	
8	39,9	α-COPAENE	0,34		
9	41,7	β-BOURBONENE	0,02		
10	42,9	β1-CUBEBENE	0,02		
11	45,0	SESQUITERPENE	0,54		
12	45,4	SESQUITERPENE	0,08		
13	46,4	**α-GUAIENE** + β-ELEMENE	**13,37**	**11 - 16**	
14	47,0	**β-CARYOPHYLLENE**	**3,13**	**2 - 5**	
15	48,1	SATIVENE	0,01		
16	48,4	SESQUITERPENE	0,03		
17	48,5	GERMACRENE A	0,04		
18	49,8	**α-PATCHOULENE**	**4,58**		
19	50,0	γ-GURJUNENE	1,78		
20	50,1	**SEYCHELLENE**	**6,13**		
21	50,6	E-β-FARNESENE	0,03		
22	51,0	γ-PATCHOULENE	0,88		
23	51,2	SESQUITERPENE	0,06		
24	51,5	GUAIENE ISOMER	0,40		
25	51,6	α-HUMULENE	0,60		
26	51,9	GUAIENE ISOMER	0,17		
27	52,1	γ-SELINENE	0,39		
28	52,2	FARNESENE ISOMER	0,04		
29	52,5	4,5-di-épi-ARISTOLOCHENE	0,24		
30	52,8	CALARENE	0,14		
31	52,5	**ACIPHYLLENE (GUAI-4,11-DIENE)**	**2,55**		
32	54,0	GUAIADIENE ISOMER + SESQUITERPENE Mw=202	0,48		
33	54,4	**α-BULNESENE**	**17,18**	**13 - 21**	
34	54,6	γ-BISABOLENE + β-SELINENE	0,71		
35	54,8	α-SELINENE	0,11		
36	55,1	7-épi-α-SELINENE	0,10		
37	55,3	SESQUIT, Mw=202	0,08		
38	55,7	SESQUIT, Mw=204	0,05		
39	56,7	BICYCLOGERMACRENE	0,09		
40	57,1	SELINADIENE ISOMER	0,12		
41	57,4	SESQUITERPENE Mw=202	0,21		
42	57,6	SESQUITERPENE Mw=202	0,12		
43	58,1	ARISTOLADIENE ISOMER	0,22		
44	58,4	COMPOUND Mw=218	0,06		
45	58,8	SESQUITERPENE Mw=202	0,22		

Identification results 2 : PATCHOULI DARK INDONESIA BATCH P20102

Peak	RT (min)	Compound name	%	Norm (%)	Allergens (%)
46	59,2	SESQUITERPENE Mw=202	0,04		
47	60,6	SESQUITERPENE Mw=204	0,11		
48	61,4	CALAMENENE	0,03		
49	61,6	SESQUITERPENE Mw=202	0,07		
50	62,2	SESQUITERPENE Mw=204	0,01		
51	64,9	SESQUITERPENIC EPOXIDE	0,06		
52	65,6	OXYGENED SESQUITERPENE	0,06		
53	65,9	COMPOUND Mw=218	0,02		
54	66,5	SESQUITERPENIC COMPOUND	0,02		
55	67,0	HUMULENE EPOXIDE	0,01		
56	67,4	SESQUITERPENIC EPOXIDE	0,22		
57	69,0	SESQUITERPENIC EPOXIDE	0,02		
58	69,2	OXYGENED SESQUITERPENE	0,03		
59	69,9	ISOCARYOPHYLLENE EPOXIDE	0,05		
60	70,2	AROMATIC COMPOUND Mw=222	0,01		
61	70,5	CARYOPHYLLENE EPOXIDE	0,33		
62	71,1	COMPOUND Mw=218	0,02		
63	73,5	SESQUITERPENOL Mw=220	0,04		
64	72,2	Cis-NEROLIDOL	0,03		
65	73,5	SESQUITERPENIC EPOXIDE	0,04		
66	73,9	Epoxy-6,7-HUMULENE	0,17		
67	75,8	ELEMOL	0,04		
68	76,3	OXYGENED SESQUITERPENE	0,05		
69	76,7	SESQUITERPENIC EPOXIDE	0,42		
70	77,3	**NORPATCHOULENOL Mw=206**	**0,59**	**0,35 - 1**	
71	78,1	OXYGENED SESQUITERPENE	0,06		
72	78,7	BULNESOL ISOMER	0,80		
73	79,4	SESQUITERPENOL Mw=220	0,08		
74	79,9	SESQUITERPENOL Mw=222	0,13		
75	80,3	1,5-époxy-α-GUAIENE	0,22		
76	80,5	SESQUITERPENIC EPOXIDE	0,19		
77	81,0	**PATCHOULOL**	**32,51**	**27 - 35**	
78	81,3	SESQUITERPENOL	0,04		
79	81,5	COMPOUND Mw=178	0,10		
80	81,7	**POGOSTOL**	**2,20**	**1 – 2,5**	
81	82,2	SESQUITERPENIC ACETATE	0,31		
82	83,1	HYDROXY SESQUITERPENOL	0,05		
83	83,5	SESQUITERPENOL Mw=220	0,03		
84	83,8	SESQUITERPENOL	0,13		
85	84,0	EUDESMA-7-EN-4-OL	0,10		
86	84,7	SESQUITERPENIC EPOXIDE	0,06		
87	85,2	PATCHOULENONE Mw=218	0,16		
88	85,4	SESQUITERPENOL Mw=220	0,07		
89	86,0	SESQUITERPENE EPOXIDE	0,11		
90	86,8	SESQUITERPENONE Mw=218	0,11		

Identification results 3 : PATCHOULI DARK INDONESIA BATCH P20102

Peak	RT (min)	Compound name	%	Norm (%)	Allergens (%)
91	87,0	SESQUITERPENE EPOXIDE	0,05		
92	88,0	SESQUITERPENOL	0,04		
93	89,4	PHENYLIC COMPOUND Mw=220	0,04		
94	89,6	SESQUITERPENOL Mw=220	0,07		
95	90,8	SESQUITERPENOL Mw=222	0,20		
96	92,4	SESQUITERPENONE Mw=218	0,09		
97	92,3	SESQUITERPENE EPOXIDE	0,04		
98	92,9	AROMATIC COMPOUND	0,06		
99	93,8	SESQUITERPENONE Mw=218	0,03		
100	94,9	POGOSTONE Mw=224	1,02		
101	95,8	SESQUITERPENOL Mw=220	0,11		
102	96,7	COMPONENT Mw=236	0,05		
103	97,5	SESQUITERPENE EPOXIDE	0,03		
104	99,3	PHYTOL	0,03		
105	101,5	AROMATIC COMPOUND	0,05		
		TOTAL	**99,98**		**0,01**