



PLANT THERAPY

100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: P70101

ESSENTIAL OIL: PINE
BOTANICAL NAME: PINUS SILVESTRIS
ORIGIN: AUSTRIA

KEY CONSTITUENTS IN THIS BATCH OF PINE OIL	%
α -PINENE	57.6
Δ 3-CARENE	9.3
β -PINENE	8.1
LIMONENE	8.1
β -MYRCENE	4.3
β -PHELLANDRENE + 1,8-CINEOLE	1.9
p-CYMENE	1.9
CAMPHENE	1.8
β -CARYOPHYLLENE	1.5

Comments from Robert Tisserand: A very good odor profile, and the analysis shows a typical Scotch pine oil.

CUSTOMER :

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

Sample nature: ESSENTIAL OIL
Botanical species: PINUS sp.
Reference name: PINE
Batch number: P70101
Origin: AUSTRIA
Part: LEAF
Pyrenessences reference: D592
Date of reception: 04/30/2015
Date analysis: 05/11/2015
Packaging: Amber flask of 4 mL – ambient temperature
Analysis: GC/MS/FID

Validated report by :

Daniel DANTIN



GAS CHROMATOGRAPHY norm NF ISO 11024

Analysis conditions :

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

CPG 6890 FID - 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

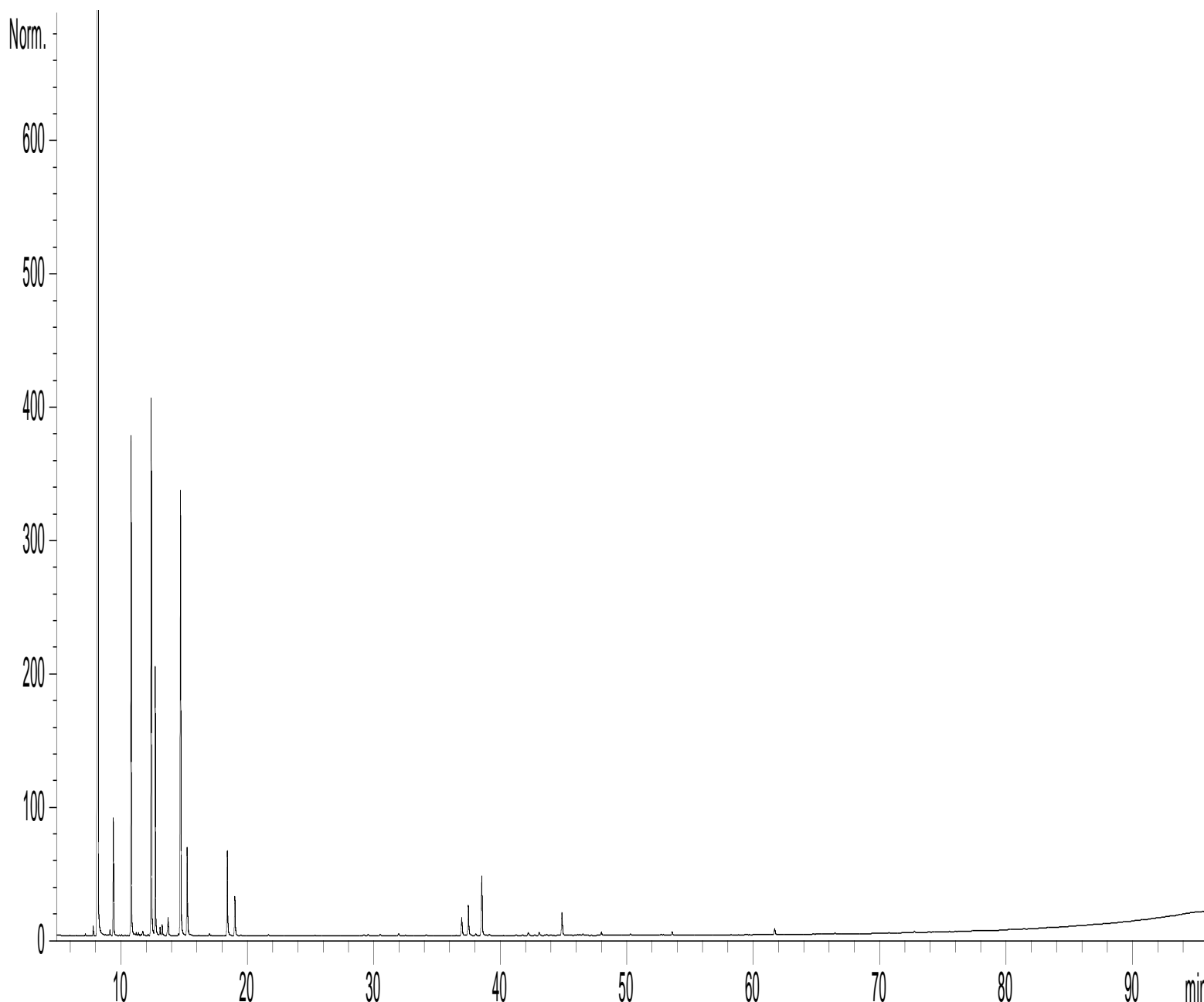
Sample injection / split : 1 µl of 10 % solution in hexane,

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\PN45D592.D)



Identification results 1 : PINE AUSTRIA BATCH P70101

Peak	RT (min)	Component name	%	Norm (%)	Allergens (%)
1	7,2	SANTENE	0,02		
2	7,8	TRICYCLENE	0,14		
3	8,2	α-PINENE	57,56		
4	8,7	TOLUENE	0,01		
5	9,0	β-FENCHENE	0,01		
6	9,1	α-FENCHENE	0,11		
7	9,4	CAMPHENE	1,78		
8	9,6	HEXANAL	0,02		
9	9,9	OCTENE METHYL METHYLENE ISOMER	0,02		
10	10,0	2,6-OCTADIENE, Cis-2,6-DIMETHYL-	0,02		
11	10,3	1,6-OCTADIENE, 2,7-DIMETHYL-	0,01		
12	10,8	β-PINENE	8,12		
13	11,2	SABINENE	0,07		
14	11,4	PINADIENE	0,06		
15	11,6	Δ2-CARENE	0,03		
16	11,7	p-MENTH-3-ENE	0,11		
17	11,9	TERPENE ISOMER	0,02		
18	12,1	2,4-OCTADIENE, 3,7-DIMETHYL	0,03		
19	12,4	Δ3-CARENE	9,25		
20	12,7	β-MYRCENE	4,30		
21	13,1	α-PHELLANDRENE	0,17		
22	13,2	ψ-LIMONENE	0,22		
23	13,7	1,4-CINEOLE + o-CYMENE	0,08		
24	13,7	α-TERPINENE	0,34		
25	14,5	ISOSYLVESTRENE	0,04		
26	14,7	LIMONENE	8,10		8,10
27	15,2	β-PHELLANDRENE + 1,8-CINEOLE	1,88		
28	15,4	MENTHATRIENE ISOMER	0,04		
29	16,1	Cis-β-OCIMENE	0,01		
30	17,0	γ-TERPINENE	0,04		
31	17,1	Trans-β-OCIMENE	0,01		
32	18,2	m-CYMENE	0,01		
33	18,4	p-CYMENE	1,86		
34	19,0	TERPINOLENE	0,82		
35	19,5	TERPINOLENE ISOMER	0,02		
36	21,7	PINOL	0,03		
37	25,0	PINENE EPOXIDE	0,01		
38	25,4	3-OCTANOL	0,01		
39	29,2	α,p-DIMETHYLSTYRENE	0,03		
40	29,6	5-HEPTEN-2-OL, 6-METHYL	0,01		
41	29,6	α-CUBEBENE	0,02		
42	30,5	EPOXY-4,8-TERPINOLENE	0,01		
43	30,5	α-LONGIPINENE	0,03		
44	31,3	YLANGENE	0,01		
45	32,0	α-COPAENE	0,06		

Identification results 2 : PINE AUSTRIA BATCH P70101

Peak	RT (min)	Component name	%	Norm (%)	Allergens (%)
46	32,5	LONGICYCLENE	0,02		
47	34,1	COPACAMPHENE	0,03		
48	36,5	PINOCARVONE	0,01		
49	37,0	LONGIFOLENE	0,49		
50	37,2	SESQUITERPENE	0,02		
51	37,5	BORNYL ACETATE	0,76		
52	38,1	METHYL THYMOL ETHER	0,04		
53	38,5	β -CARYOPHYLLENE	1,50		
54	39,1	TERPINENE-4-OL	0,03		
55	41,2	MYRTENAL	0,02		
56	41,7	Trans-SABINYL ACETATE	0,01		
57	42,2	Trans-PINOCARVEOL	0,08		
58	42,7	MENTHADIENOL ISOMER	0,02		
59	43,1	α -HUMULENE	0,09		
60	43,7	NERAL	0,03		0,03
61	44,0	ESTRAGOL	0,02		
62	44,7	γ -MUUROLENE	0,02		
63	44,9	α -TERPINEOL	0,52		
64	44,9	BORNEOL	0,08		
65	45,5	VERBENONE	0,01		
66	46,1	MUUROLADIENE ISOMER	0,02		
67	46,3	MENTHADIENOL ISOMER	0,02		
68	46,5	α -MUUROLENE	0,04		
69	48,0	δ -CADINENE	0,08		
70	48,3	γ -CADINENE	0,01		
71	50,3	MYRTENOL	0,04		
72	52,7	CALAMENENE	0,02		
73	52,9	Trans-CARVEOL	0,01		
74	53,6	p-CYMENE-8-OL	0,08		
75	59,4	PIPERITENONE	0,01		
76	61,2	ISOCARYOPHYLLENE EPOXIDE	0,01		
77	61,7	CARYOPHYLLENE EPOXIDE	0,16		
78	64,8	EPOXY-6,7-HUMULENE	0,01		
79	66,5	GUAIOL	0,03		
80	71,8	GERANYLGERANIADIENE Mw=272	0,01		
81	72,8	BULNESOL	0,04		
		TOTAL	99,94		8,13