

Certificate of Analysis

Analysed essential oil: Aleppo Pine

Analysis date : December, 3rd 2015

Batch : 335EB503

Shelf life : June 2017

❖ General description

Essential oil	Aleppo Pine	Origin	Algeria
Latin name	<i>Pinus halepensis</i>		

❖ Organoleptic characteristics

Appearance	Clear and mobile liquid
Colour	Almost colourless
Odour	Characteristic

❖ Physico-chemical characteristics

	Results (at 20°C)	Technical specifications				
Specific gravity	0.872	0.841	<	d	<	0.900
Refractive index	1.4810	1.4650	<	IR	<	1.4850
Optical rotation	+8.80°	+5°	<	$[\alpha]^{20}_d$	<	+15°
Peroxide index	1.1 mmol/L	0 mmol/L	<	IP	<	10 mmol/L

❖ Volatile elucidation

GC : Perkin Elmer – Clarus 500

Column : Elite - 1, 30 m, Ø 0.25 mm, 0.25 µm df

Injection : split

Detector : FID

Carrier gas : H₂

⇒ See Chromatogram : non-polar column

Date : 2015-12-03

Software Version : 6.2.0.0.0:B27
Sample Name : Pin d'Alep
Instrument Name : CLARUS 500
Rack/Vial : 0/3
Sample Amount : 1.000000
Cycle : 3

Date : 03/12/2015 13:42:09
Data Acquisition Time : 01/12/2015 20:53:12
Channel : A
Operator : Davenne
Dilution Factor : 1.000000

Result File :
Sequence File : C:\Sequences\CPG\2015\151201b.seq

Rapport d'analyse

colonne apolaire

Pic #	Component Name	TR [min]	Area [%]
1		4.64	0.02
2	tricyclene	9.41	0.13
3	thujene <alpha>	9.58	0.12
4	pinene <alpha>	9.87	34.73
5	camphene	10.31	0.58
6		10.47	0.16
7	sabinene	11.25	0.49
8	pinene <beta>	11.40	0.83
9	myrcene	12.04	16.26
10	carene <delta-3>	12.88	1.56
11	terpinene <alpha>	13.07	0.15
12	cymene <p>	13.20	0.16
13	limonene+phellandrene <beta>	13.59	0.89
14	ocimene <(E)-beta>	14.43	0.55
15	terpinene <gamma>	14.87	0.27
16		15.95	0.07
17	terpinolene	16.20	1.61
18	linalool	16.49	0.15
19		16.62	0.06
20		17.31	0.07
21	camphor	17.94	0.14
22		18.10	0.14
23		18.41	0.08
24		18.73	0.05
25	borneol	19.19	0.06
26	terpinen-4-ol	19.86	0.31
27		20.19	0.07
28	terpineol <alpha>	20.36	0.20
29		20.69	0.16
30	bornyl acetate	24.66	0.17
31		27.99	0.08
32		28.71	0.12
33	copaene <alpha>	29.08	0.41
34		29.60	0.08
35	caryophyllene <(E)>	30.78	24.38
36		31.64	0.04
37		31.89	0.05
38	humulene <alpha>	32.06	4.34
39		32.20	0.13
40		32.62	0.31
41	phenyl ethyl isovalerate	32.80	1.68
42		32.94	0.13
43	germacrene D	33.08	0.28
44		33.45	0.11
45	muurolene <alpha>	33.87	0.66
46		34.14	0.05
47		34.30	0.09
48	cadinene <delta>	34.71	0.45
49		35.48	0.22
50	caryophyllene oxide	36.61	1.07
51		37.29	0.16
52		37.55	0.25
53		38.39	0.08
54		38.55	0.06
55		38.82	0.04
56		38.99	0.08
57		39.32	0.12
58		39.79	0.09

03/12/2015 13:42:09 Result:

Pic #	Component Name	TR [min]	Area [%]
59		47.98	0.10
60		48.61	0.07
61	cembrene	48.95	0.83
62		49.37	0.23
63	camphorene <meta>	49.66	1.56
64		49.86	0.12
65		50.70	0.60
66		51.05	0.05
67		52.43	0.61
			100.00

Chromatogram

Sample Name : Pin d'Alep Sample #: 335eb503 Page 1 of 1
File Name : C:\Data\Colonne Apolaire\Huiles Essentielles\Pin\Pin d'Alep\2015\pin d'alep 151201.raw
Date : 03/12/2015 13:42:10
Method : pin d'alep.mth Time of Injection: 01/12/2015 20:53:12
Start Time : 0.00 min End Time : 82.00 min Low Point : -47.25 mV High Point : 993.88 mV
Plot Offset: -47.25 mV Plot Scale: 1041.1 mV

