

Certificate of Analysis

Analysed essential oil : **Black Pepper**

Analysis date : June, 4th 2015

Batch : 154NH501

Shelf life : December 2017

❖ General description

Essential oil	Black Pepper	Origin	Madagascar
Latin name	<i>Piper nigrum L.</i>		

❖ Organoleptic characteristics

Appearance	Clear and mobile liquid
Colour	Colourless
Odour	Characteristic

❖ Physico-chemical characteristics

	Results (at 20°C)	Technical specifications				
Specific gravity	0.875	0.860	<	d	<	0.895
Refractive index	1.4822	1.4750	<	IR	<	1.4920
Optical rotation	ND	-16°	<	$[\alpha]_d^{20}$	<	+6°

❖ 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 : 2015-06-04

Software Version : 6.2.0.0.0:B27
Sample Name : Poivre Noir
Instrument Name : CLARUS 500
Rack/Vial : 0/7
Sample Amount : 1.000000
Cycle : 7

Date : 04/06/2015 09:50:40
Data Acquisition Time : 04/06/2015 02:30:46
Channel : A
Operator : Davenne
Dilution Factor : 1.000000

Result File :
Sequence File : C:\Sequences\CPG\2015\150603.seq

Rapport d'analyse

colonne apolaire

Pic #	Component Name	TR [min]	Area [%]
1	thujene <alpha>	9.76	0.06
2	pinene <alpha>	10.02	12.01
3	camphene	10.50	0.37
4	sabinene	11.45	0.18
5	pinene <beta>	11.61	10.58
6	myrcene	12.22	2.04
7	phellandrene <alpha>	12.74	2.11
8	carene <delta-3>	13.10	10.05
9	terpinene <alpha>	13.28	0.12
10	cymene <p>	13.42	0.22
11	limonene + phellandrene <beta>	13.84	16.98
12	ocimene <(E)-beta>	14.65	0.21
13	terpinene <gamma>	15.06	0.13
14	terpinolene	16.42	0.71
15	linalool	16.73	0.31
16	terpineol <alpha>	20.61	0.14
17	elemene <delta>	27.71	3.44
18		28.27	0.12
19		29.03	0.24
20		29.16	0.10
21	copaene <alpha>	29.35	0.21
22		29.59	0.07
23	elemene <beta>	29.90	1.46
24		30.75	0.16
25	caryophyllene <(E)>	31.07	26.13
26		31.84	0.56
27	humulene <alpha>	32.33	1.80
28	germacrene D	33.37	3.50
29	selinene <beta>	33.58	2.11
30	selinene <alpha> + bicyclogerm	33.99	1.79
31		34.15	0.06
32		34.31	0.22
33	cadinene <gamma>	34.41	0.16
34		34.80	0.13
35	cadinene <delta>	34.99	0.29
36		35.70	0.03
37		36.26	0.27
38	caryophyllene oxide	36.91	0.31
39		38.58	0.25
40		40.53	0.15
41		42.02	0.07
42		53.90	0.08
43		59.42	0.08
			100.00

Chromatogram

Sample Name : Poivre Noir Sample #: 154NH501 Page 1 of 1
FileName : C:\Data\Colonne Apolaire\Huiles Essentielles\Poivre\Poivre Noir\2015\poivre noir 150603.raw
Date : 04/06/2015 09:50:43
Method : Poivre Noir.mth Time of Injection: 04/06/2015 02:30:46
Start Time : 0.00 min End Time : 82.00 min Low Point : -47.27 mV High Point : 993.88 mV
Plot Offset: -47.27 mV Plot Scale: 1041.1 mV

