

GC/MS BATCH NUMBER: R40102

ESSENTIAL OIL: ROSEMARY
BOTANICAL NAME: ROSMARINUS OFFICINALIS
ORIGIN: TUNISIAN

KEY CONSTITUENTS PRESENT IN THIS BATCH OF ROSEMARY OIL	%
1,8-CINEOLE	46.4
α -PINENE	11.0
CAMPHOR	10.5
β -PINENE	7.5
CAMPHENE	4.3
β -CARYOPHYLLENE	3.3
BORNEOL	2.3
LIMONENE	2.3
α -TERPINEOL	1.5
β -MYRCENE	1.4
p-CYMENE	1.2
LINALOOL	0.8
BORNYL ACETATE	0.8

Comments from Robert Tisserand: Smells like an excellent rosemary, and conforms to the ISO standard for rosemary cineole chemotype.

Customer :

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

Sample nature: ESSENTIAL OIL
Botanical name: ROSMARINUS OFFICINALIS
Reference name: ROSEMARY
Batch number: R40102
Origin: TUNISIAN
Part: PLANT AND FLOWER
Pyrenessences reference: E190
Date of reception: 07/07/2015
Date analysis: 07/18/2015
Packaging: Amber flask of 4 ml - ambient temperature
Wanted analysis: Classic analysis

Report validated by :

Daniel Dantin



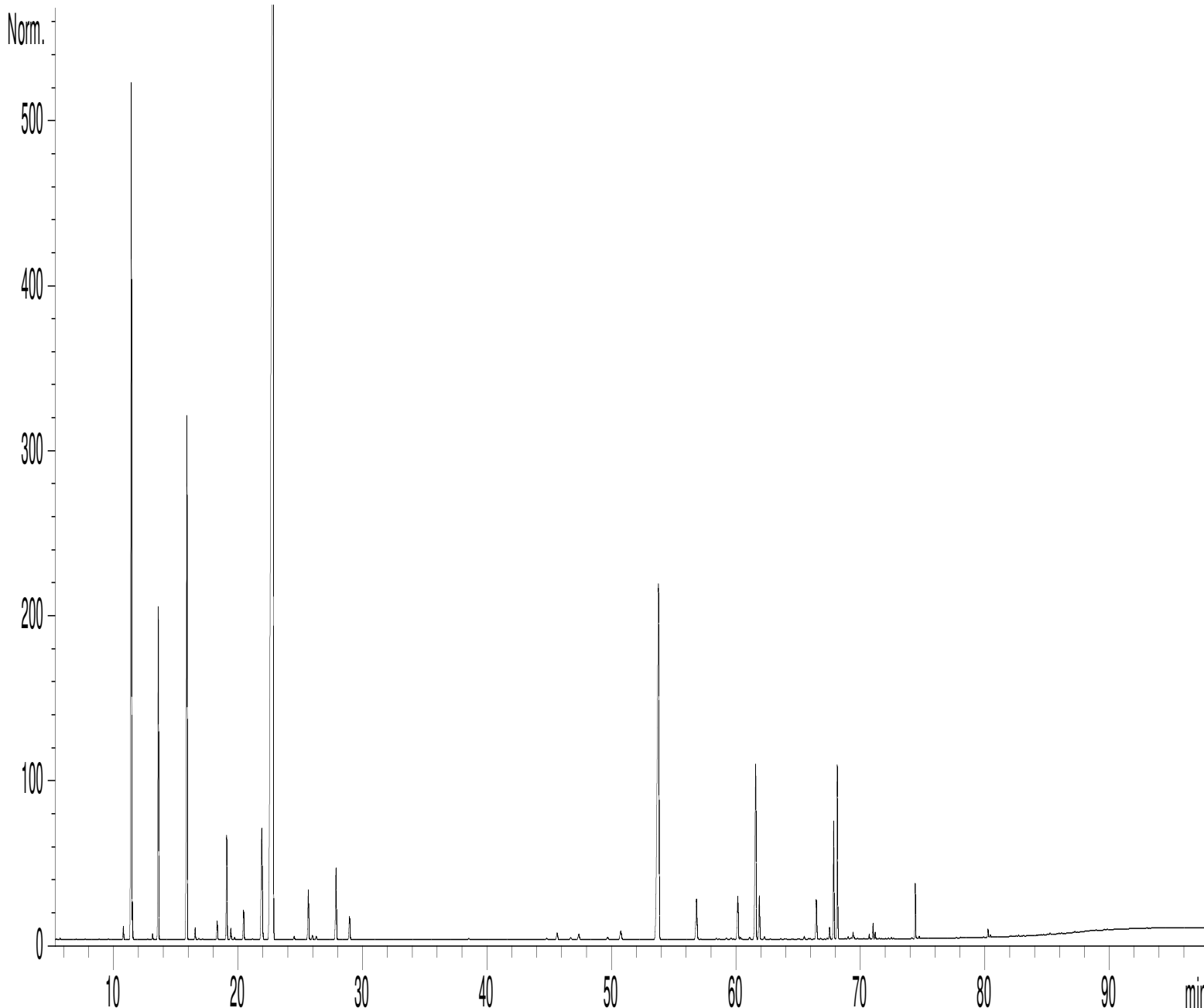
GAS CHROMATOGRAPHY (norm NF ISO 11024)

Conditions :

GC FID 6890 / MS 5973 AGILENT– Column : VF WAX polar 60 m × 0,25 mm × 0,5 µm
GC FID 6890 - Column : VF WAX polar 60 m × 0,25 mm × 0,5 µm
Temperature program : 6 min à 60°C – 2°C/min→80 °C – 1°C/min→120°C – 4°C/min→250°C – 10 min à 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\RO15E190.D)



Identification results 1 – ROSEMARY TUNISIAN BATCH R40102

Peak	RT (min)	Compound	%	Norm (%)	Allergens (%)
1	10,8	TRICYCLENE	0,15		
2	11,4	α-PINENE	11,03	9,0 – 14,0	
3	11,5	α-THUYENE	0,33		
4	13,1	α-FENCHENE	0,07		
5	13,6	CAMPHENE	4,25	2,5 – 6,0	
6	15,9	β-PINENE	7,54	4,0 – 9,0	
7	16,6	SABINENE	0,14		
8	16,8	PINADIENE	0,01		
9	18,3	Δ3-CARENE	0,25		
10	19,1	β-MYRCENE	1,41	1,0 – 2,0	
11	19,4	α-PHELLANDRENE	0,15		
12	19,7	ψ-LIMONENE	0,03		
13	20,4	α-TERPINENE	0,43		
14	21,9	LIMONENE	2,29	1,5 – 4,0	2,29
15	22,8	1,8-CINEOLE	46,38	38,0 – 55,0	
16	24,5	Cis-β-OCIMENE	0,05		
17	25,6	γ-TERPINENE	0,79		
18	26,0	Trans-β-OCIMENE	0,07		
19	26,3	3-OCTANONE	0,05		
20	27,9	p-CYMENE	1,19	0,5 – 2,5	
21	28,9	TERPINOLENE	0,39		
22	38,5	3-HEXEN1-OL	0,02		
23	44,8	α-p-DIMETHYLSTYRENE	0,03		
24	45,6	1-OCTENE-3-OL	0,14		
25	46,7	α-CUBEBENE	0,04		
26	47,4	Trans-THUYANOL	0,12		
27	49,7	YLANGENE	0,05		
28	50,7	α-COPAENE	0,21		
29	53,8	CAMPHOR	10,45	5,0 – 15,0	
30	56,8	LINALOOL	0,84	0,3 – 2,0	0,84
31	58,4	Trans-p-MENTH-2-EN-1-OL	0,02		
32	58,6	PINOCARVONE	0,01		
33	59,2	ISOPULEGOL	0,04		
34	59,6	ε-CADINENE	0,03		
35	60,2	BORNYL ACETATE	0,80	0,1 – 1,6	
36	60,4	FENCHOL	0,04		
37	61,1	CAMPHENE HYDRATE + β-CUBEBENE	0,04		
38	61,6	β-CARYOPHYLLENE	3,30		
39	61,9	TERPINENE-4-OL	0,69		
40	62,3	ALLO-AROMADENDRENE	0,04		
41	63,6	MYRTENAL	0,01		
42	65,5	Trans-PINOCARVEOL	0,04		
43	65,8	ZONARENE	0,01		
44	66,0	Cis-ANETHOL	0,01		
45	66,4	α-HUMULENE	0,38		

Identification results 2 – ROSEMARY TUNISIAN BATCH R40102

Peak	RT (min)	Compound	%	Norm (%)	Allergens (%)
46	66,5	δ-TERPINEOL	0,30		
47	66,8	NERAL	0,01		0,01
48	67,3	SESQUITERPENE	0,01		
49	67,5	γ-MUUROLENE	0,17		
50	67,9	α-TERPINEOL	1,49	1,0 – 2,5	
51	68,1	BORNEOL	2,32	1,0 – 5,0	
52	68,5	VERBENONE	Nd	Nd – 0,4	
53	69,0	GERMACRENE D	0,03		
54	69,3	β-SELINENE	0,02		
55	69,4	α-MUUROLENE	0,08		
56	69,5	β-BISABOLENE	0,02		
57	70,7	GERANYL ACETATE	0,05		
58	71,0	δ-CADINENE	0,20		
59	71,2	γ-CADINENE	0,08		
60	71,5	SESQUITERPENE	0,01		
61	72,2	β-SESQUIPELLANDRENE	0,01		
62	72,5	MYRTENOL	0,02		
63	72,7	SESQUITERPENE Mw=202	0,02		
64	74,1	CALAMENENE	0,01		
65	74,4	GERANIOL	0,60		0,60
66	74,7	p-CYMENE-8-OL	0,02		
67	77,7	α-CALACORENE	0,01		
68	78,0	SESQUITERPENIC EPOXIDE	0,01		
69	80,3	CARYOPHYLLENE EPOXIDE	0,09		
70	80,4	E-METHYLEUGENOL	0,02		
71	82,7	1,4-DIHYDROXY-p-MENTH-2-ENE	0,01		
72	85,2	EUGENOL	0,01		0,01
73	87,2	Trans-LIMONENE-1,2-DIOL	0,01		
		TOTAL	99,99		3,75