



PLANT THERAPY

100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: M20101

ESSENTIAL OIL: MARJORAM
BOTANICAL NAME: ORIGANUM MARJORANA
ORIGIN: HUNGARY

KEY CONSTITUENTS IN THIS BATCH OF MARJORAM OIL	%
TERPINEN-4-OL	24.9
γ -TERPINENE	15.4
Cis-THUJANOL	7.6
SABINENE	7.5
LINALOOL	7.3
α -TERPINENE	6.9
LINALYL ACETATE	4.7
p-CYMENE	4.7
LIMONENE	4.4
α -TERPINEOL	2.6
β -CARYOPHYLLENE	2.1
Trans-THUJANOL	1.9
TERPINOLENE	1.6
β -PINENE	1.4
β -PHELLANDRENE	1.2
β -MYRCENE	1.0

Comments from Robert Tisserand: The analysis looks fine, and the odor is good and true.

CUSTOMER :

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

Sample nature: ESSENTIAL OIL
Botanical species: ORIGANUM MAJORANA
Reference name: MARJORAM
Batch number: M20101
Origin: HUNGARY
Part: FLOWER/LEAF
Pyrenessences reference: D131
Date of reception: 03/12/2015
Date analysis: 03/17/2015
Packaging: Amber flask of 4 ml – ambient temperature
Analysis: Classic

Validated report by :

Daniel DANTIN



GAS CHROMATOGRAPHY norm NF ISO 11024

Analysis conditions :

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

CPG 6890 FID AGILENT – 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

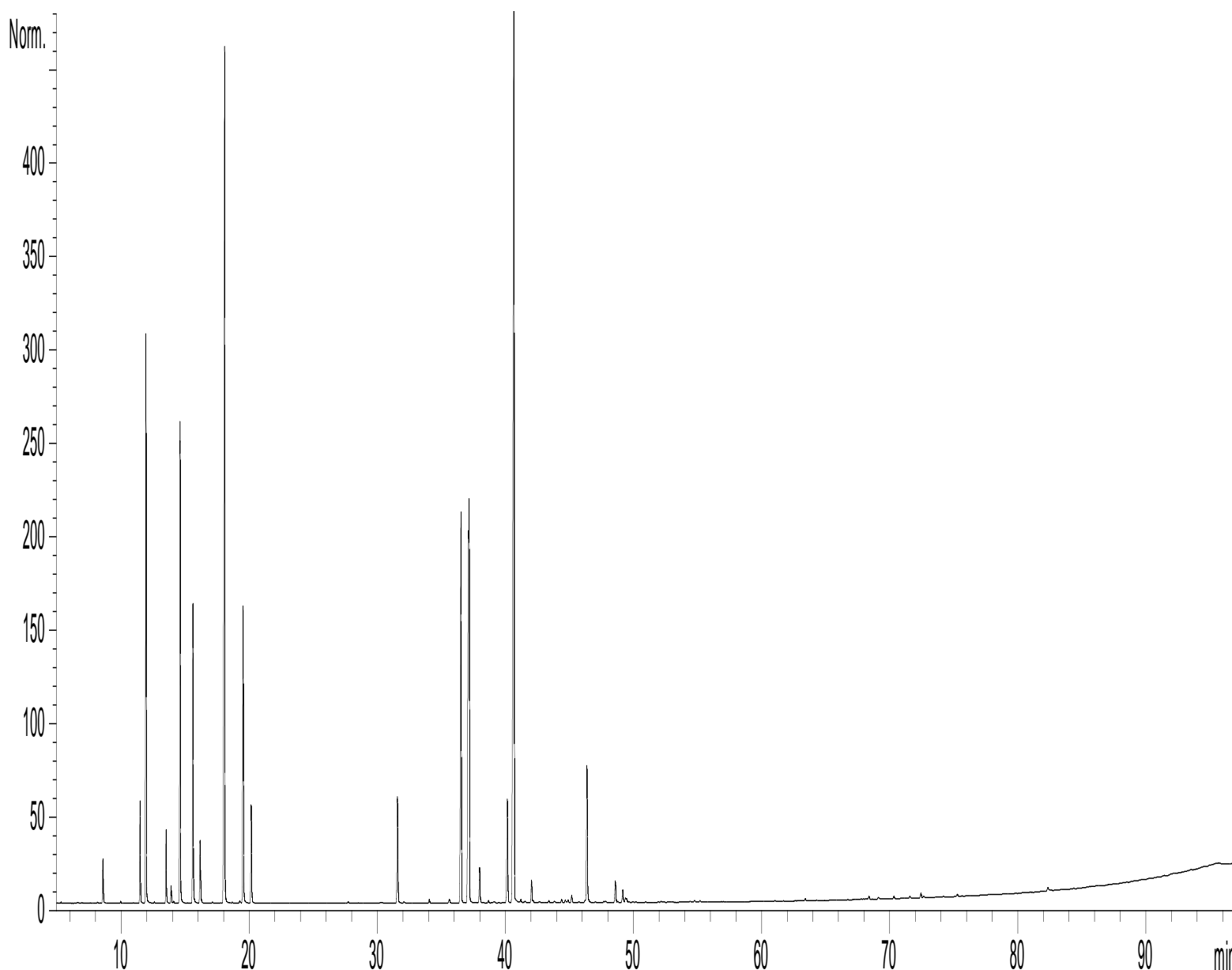
Sample injection / split : 1 µl of 10 % solution in hexane,

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\OM84D131.D)



Identification results 1 : MARJORAM HUNGARY BATCH M20101

Peak	RT (min)	Compound name	%	Norm (%)	Allergens (%)
1	8,1	METHYL 2-METHYLBUTYRATE	0,01		
2	8,5	α -PINENE	0,38		
3	8,6	α -THUYENE	0,35		
4	9,9	CAMPHENE	0,02		
5	11,5	β -PINENE	1,39		
6	11,9	SABINENE	7,46		
7	12,6	p-MENTH-2-ENE	0,02		
8	13,5	β -MYRCENE	1,01		
9	13,9	α -PHELLANDRENE	0,27		
10	14,1	ψ -LIMONENE	0,03		
11	14,6	α -TERPINENE	6,89		
12	15,2	2,3-DEHYDRO-1,8-CINEOLE	0,01		
13	15,6	LIMONENE	4,43		4,43
14	16,1	β -PHELLANDRENE	1,17		
15	16,2	1,8-CINEOLE	0,05		
16	17,1	Cis- β -OCIMENE	0,02		
17	18,1	γ -TERPINENE	15,44		
18	18,2	Trans- β -OCIMENE	0,04		
19	18,7	3-OCTANONE	0,02		
20	19,2	3,8-p-MENTHADIENE	0,05		
21	19,5	p-CYMENE	4,68		
22	20,1	TERPINOLENE	1,58		
23	27,7	FENCHONE	0,03		
24	30,3	LINALOOL cis-OXIDE	0,01		
25	31,5	Trans-THUYANOL	1,89		
26	32,1	LINALOOL trans-OXIDE	0,03		
27	34,1	Z-SOLANONE	0,07		
28	35,6	E-SOLANONE	0,09		
29	36,5	LINALOOL	7,31		7,31
30	37,1	Cis-THUYANOL	7,58		
31	37,2	LINALYL ACETATE	4,69		
32	38,0	Trans-p-MENTH-2-EN-1-OL	0,63		
33	38,7	TERPINENE-1-OL	0,04		
34	39,1	BORNYL ACETATE	0,03		
35	40,1	β -CARYOPHYLLENE	2,12		
36	40,7	TERPINENE-4-OL	24,91		
37	41,2	TERPINENE-4-YL ACETATE	0,05		
38	41,5	Cis-DIHYDROCARVONE	0,03		
39	42,0	Cis-p-MENTH-2-EN-1-OL	0,43		
40	42,1	Cis- β -TERPINEOL	0,05		
41	43,4	TERPENIC DIEPOXIDE	0,04		
42	43,8	Trans-PINOCARVEOL + PULEGONE	0,06		
43	44,4	ISOBORNEOL	0,07		
44	44,7	ESTRAGOL	0,07		
45	44,9	α -HUMULENE	0,06		

Identification results 2 : MARJORAM HUNGARY BATCH M20101

Peak	RT (min)	Compound name	%	Norm (%)	Allergens (%)
46	45,2	Cis-PIPERITOL	0,15		
47	45,7	NERAL	0,02		0,02
48	46,4	α-TERPINEOL	2,62		
49	47,0	LEDENE	0,03		
50	47,7	EPOXY TERPENIC COMPOUND	0,02		
51	47,8	NERYL ACETATE	0,03		
52	48,4	CARVONE	0,06		
53	48,5	BICYCLOGERMACRENE	0,36		
54	49,2	Trans-PIPERITOL	0,25		
55	49,3	GERANYL ACETATE	0,08		
56	49,4	HYDROXY-p-MENTHENONE ISOMER	0,07		
57	49,6	δ-CADINENE	0,01		
58	52,0	CAMPHOLENOL	0,01		
59	52,2	NEROL	0,01		
60	54,4	Trans-CARVEOL	0,03		
61	54,8	GERANIOL	0,03		0,03
62	55,2	p-CYMENE-8-OL	0,03		
63	63,4	CARYOPHYLLENE OXIDE	0,05		
64	68,4	1,4-DIHYDROXY-p-MENTH-2-ENE ISOMER	0,06		
65	69,1	CYCLOOCTANONE	0,04		
66	70,4	SPATHULENOL	0,05		
67	71,6	1,4-DIHYDROXY-p-MENTH-2-ENE ISOMER	0,05		
68	72,5	ACETYL KETONE COMPOUND	0,11		
69	72,7	EUGENOL	0,05		0,05
70	75,3	ISOSPATHULENOL ISOMER	0,05		
71	82,4	DITERPENIC COMPOUND	0,11		
		TOTAL	99,99		11,84