PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: G50101

ESSENTIAL OIL: PINK GRAPEFRUIT
BOTANICAL NAME: CITRUS PARADISII
ORIGIN: USA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF GRAPEFRUIT OIL	%
LIMONENE	94.2
β-MYRCENE	1.9
α-PINENE	0.5
SABINENE	0.5
OCTANAL	0.4
DECANAL	0.3
β-CARYOPHYLLENE	0.2
β-PINENE	0.1
NONANAL	0.1
NOOTKATONE	0.03
NERAL	0.03

Comments from Robert Tisserand: A delightful pink grapefruit that conforms with the 11 key constituents in the ISO standard.

CUSTOMER :

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

Sample nature:	ESSENTIAL OIL
Botanical species:	CITRUS PARADISII
Reference name:	PINK GRAPEFRUIT
Batch number:	G50101
Origin:	USA
Part:	PEEL
Pyrenessences reference:	D477
Date of reception:	04/07/2015
Date analysis:	04/22/2015
Packaging:	Amber flask of 4 mL – ambient temperature
Analysis:	Classic analysis

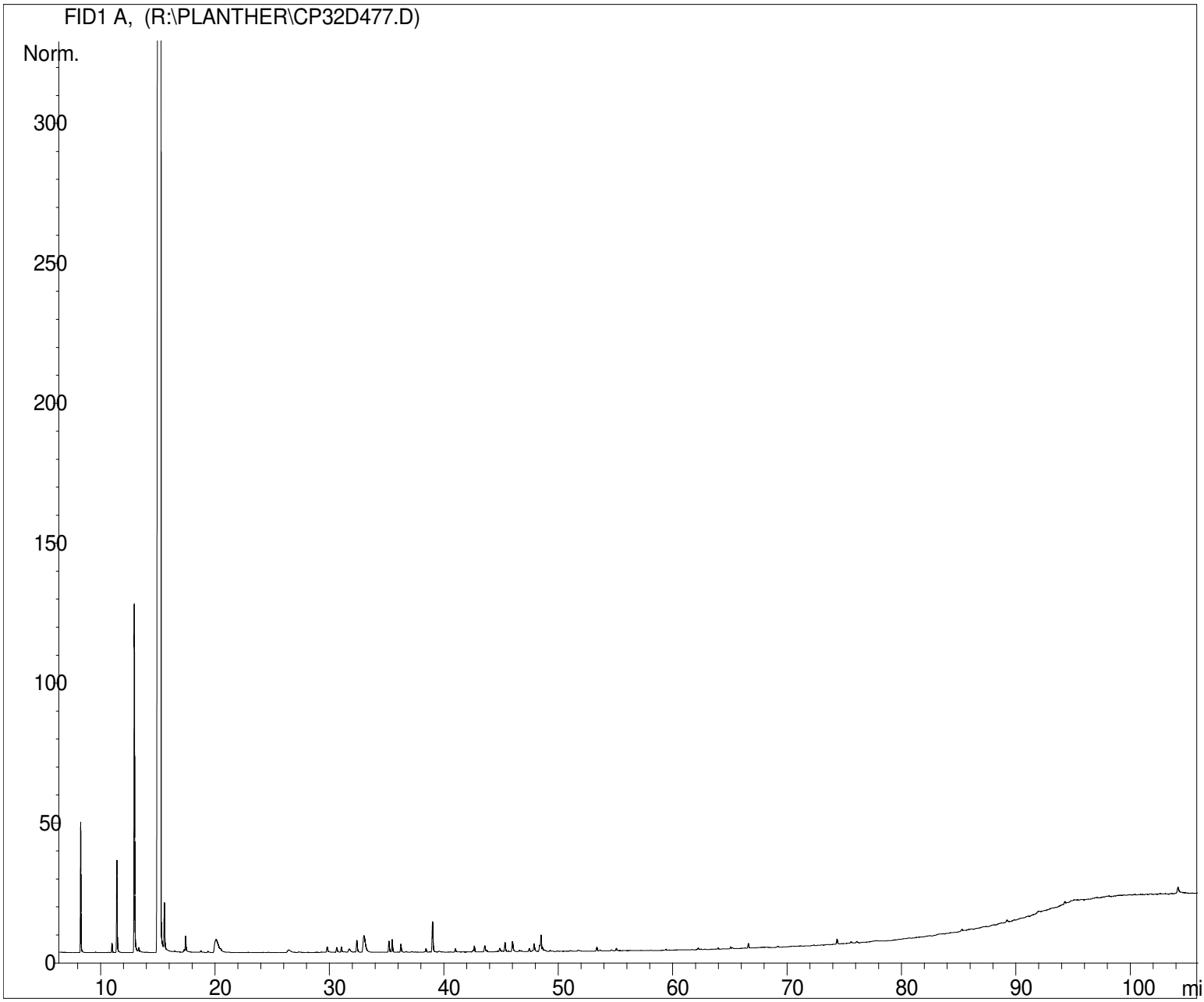
Validated report by : **Daniel DANTIN**

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 – 20 mn 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)



Identification results 1 : PINK GRAPEFRUIT USA BATCH G50101

Peak	RT (min)	Component name	%	Norm (%)	Allergèns (%)
1	8,2	**α-PINENE**	**0,53**	**0,2 – 0,6**	
2	8,3	α-THUYENE	0,01		
3	11,0	**β-PINENE**	**0,05**	**0,05 – 0,2**	
4	11,4	**SABINENE**	**0,48**	**0,1 – 0,6**	
5	13,0	**β-MYRCENE**	**1,92**	**1,5 – 2,5**	
6	13,3	α-PHELLANDRENE	0,05		
7	15,3	**LIMONENE**	**94,21**	**92 - 96**	94,21
8	15,6	β-PHELLANDRENE	0,31		
9	16,5	Cis-β-OCIMENE	0,01		
10	17,3	γ-TERPINENE	0,01		
11	17,4	Trans-β-OCIMENE	0,09		
12	18,8	p-CYMENE	0,01		
13	19,4	TERPINOLENE	0,01		
14	20,1	**OCTANAL**	**0,37**	**0,2 – 0,8**	
15	26,4	**NONANAL**	**0,05**	**0,04 – 0,1**	
16	29,9	Cis-1,2-LIMONENE EPOXIDE	0,01		
17	30,6	trans-1,2-LIMONENE EPOXIDE	0,04		
18	31,0	OCTYL ACETATE	0,03		
19	31,7	CITRONELLAL	0,05		
20	32,4	α-COPAENE	0,09		
21	33,0	**DECANAL**	**0,30**	**0,1 – 0,6**	
22	35,2	LINALOOL	0,08		0,08
23	35,5	β1-CUBEBENE	0,08		
24	36,2	1-OCTANOL	0,05		
25	38,4	β-ELEMENE	0,03		
26	39,0	**β-CARYOPHYLLENE**	**0,22**	**0,2 – 0,5**	
27	41,0	Cis-p-MENTHA-2,8-DIEN-1-OL	0,02		
28	42,6	trans-p-MENTHA-2,8-DIEN-1-OL	0,01		
29	42,7	E-β-FARNESENE	0,04		
30	43,6	α-HUMULENE	0,05		
31	43,8	NONYL ACETATE	0,01		
32	44,9	**NERAL**	**0,03**	**0,02 – 0,04**	0,03
33	45,4	α-TERPINEOL	0,07		
34	45,6	GERANYL FORMIATE	0,01		
35	45,9	DODECANAL	0,01		
36	46,0	GERMACRENE D	0,08		
37	46,6	NERYL ACETATE	0,01		
38	46,8	α-MUUROLENE	0,01		
39	47,5	GERANIAL	0,02		0,02
40	47,9	BICYCLOGERMACRENE + CARVONE	0,06		
41	48,3	GERANYL ACETATE	0,04		
42	48,4	1-DECANOL	0,03		
43	48,5	δ-CADINENE	0,11		
44	49,3	PERILLALDEHYDE	0,01		
45	53,4	Trans-CARVEOL	0,03		

Identification results 2 : PINK GRAPEFRUIT USA BATCH G50101

Peak	RT (min)	Component name	%	Norm (%)	Allergens (%)
46	53,7	GERANIOL	0,01		0,01
47	54,6	PERILLYL ACETATE	0,01		
48	55,1	Cis-CARVEOL	0,02		
49	59,4	CUBEBOL	0,01		
50	62,2	LIMONENE-10-OL	0,01		
51	64,0	NEROLIDOL	0,01		
52	65,1	CAPRYLIC ACID	0,01		
53	66,6	ELEMOL	0,03		
54	69,2	HEXADECANAL	0,01		
55	74,4	β-SINENSAL	0,04		
56	89,2	**NOOTKATONE**	**0,03**	**0,01 – 0,8**	
57	104,2	PALMITIC ACID	0,06		
		TOTAL	**99,99**		**94,35**