



**PLANT THERAPY**  
100% PURE ESSENTIAL OILS

## GC/MS BATCH NUMBER: N10104

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**ESSENTIAL OIL:** NEROLI  
**BOTANICAL NAME:** CITRUS X AURANTIUM  
**ORIGIN:** MORROCO

KEY CONSTITUENTS PRESENT IN THIS BATCH OF NEROLI OIL	%
LINALOOL	32.7
β-PINENE	16.5
LIMONENE	12.9
trans-β-OCIMENE	7.2
LINALYL ACETATE	3.9
α-TERPINEOL	3.7
(E)-NEROLIDOL	3.1
GERANYL ACETATE	2.7
GERANIO	2.3
(2E,6E)-FARNESOL	2.1
MYRCENE	2.0
NERYL ACETATE	1.4
SABINENE	1.4
α-PINENE	1.1

Comments from Robert Tisserand: Light, fresh, citrus-floral odor quality. All 17 key ISO constituents are within range.

**Date :** October 2, 2017

*SAMPLE IDENTIFICATION*

**Internal code :** 17I29-PTH12-1-CC

**Customer identification :** Neroli - Morroco - N1010477R

**Type :** Essential oil

**Source :** *Citrus aurantium ssp. amara*

**Customer :** Plant Therapy

*ANALYSIS*

**Method :** PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

Identifications double-checked by GC-MS

**Analyst :** Alexis St-Gelais, M. Sc., chimiste

**Analysis date :** 2017-09-30

Checked and approved by :



Alexis St-Gelais, M. Sc., chimiste 2013-174

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*This report is digitally signed, it is only considered valid if the digital signature is intact.*

IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
Hexanol	2.72	882	0.02	0.03	1296	5.19	Aliphatic alcohol
$\alpha$ -Thujene	3.31	920	0.04	1.06	936	1.18*	Monoterpene
$\alpha$ -Pinene	3.42	926	1.08	[1.06]	936	1.18*	Monoterpene
Camphene	3.71	943	0.08	0.05	988	1.48	Monoterpene
Sabinene	4.14	969	1.40	2.36	1053	2.02	Monoterpene
$\beta$ -Pinene	4.23	975	16.53	15.01	1036	1.87	Monoterpene
Myrcene	4.48	989	2.04	2.04	1111	2.62*	Monoterpene
6-Methyl-5-hepten-2-one	4.56	994	0.03	0.04	1274	4.86	Aliphatic ketone
$\alpha$ -Phellandrene	4.76	1005	0.02	[2.04]	1111	2.62*	Monoterpene
$\alpha$ -Terpinene	4.94	1015	0.13	[2.04]	1111	2.62*	Monoterpene
Limonene	5.21	1029	12.91	12.73	1138	2.97*	Monoterpene
$\beta$ -Phellandrene	5.22	1030	0.19	[12.73]	1138	2.97*	Monoterpene
1,8-Cineole	5.25	1032	0.02	[12.73]	1138	2.97*	Monoterp. ether
<i>cis</i> - $\beta$ -Ocimene	5.35	1037	0.78	0.98	1181	3.57*	Monoterpene
<i>trans</i> - $\beta$ -Ocimene	5.56	1048	7.21	7.14	1203	3.79	Monoterpene
$\gamma$ -Terpinene	5.73	1058	0.26	[0.98]	1181	3.57*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	6.00	1073	0.11	0.11	1372	6.40	Monoterp. alcohol
Terpinolene	6.20	1083	0.43	0.42	1222	4.09	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.33	1090	0.05	0.06	1400	6.90	Monoterp. alcohol
Linalool	6.84	1111	32.74	32.73	1496	9.25*	Monoterp. alcohol
<i>cis</i> -para-Menth-2-en-1-ol	7.21	1125	0.03	[32.73]	1496	9.25*	Monoterp. alcohol
Phenylacetone nitrile	7.95	1152	0.17	0.20	1800	25.16	Simple phenolic
Terpinen-4-ol	8.82	1183	0.36	0.50	1522	10.16	Monoterp. alcohol
$\alpha$ -Terpineol	9.54	1205	3.66	3.91	1616	14.00*	Monoterp. alcohol
Nerol	10.62	1229	0.81	0.86	1722	19.96	Monoterp. alcohol
Neral	11.21	1242	0.03	0.02	1595	12.90	Monoterp. aldehyde
Linalyl acetate	11.47	1247	3.86	4.16	1500	9.40	Monoterp. ester
Geraniol	11.94	1258	2.25	2.41	1774	23.43	Monoterp. alcohol
Geranial	12.72	1275	0.03	1.47	1654	16.03*	Monoterp. aldehyde
Indole	14.74	1312	0.21	0.42	2287	45.00	Indole
Methyl anthranilate	17.02	1347	0.24	0.32	2095	40.18	Phenolic ester
Neryl acetate	17.92	1360	1.41	[1.47]	1654	16.03*	Monoterp. ester
$\beta$ -Elemene	18.94	1376	0.02	0.52	1517	9.99*	Sesquiterpene
Geranyl acetate	19.45	1383	2.74	2.95	1687	17.79	Monoterp. ester
$\beta$ -Caryophyllene	20.62	1400	0.64	[0.52]	1517	9.99*	Sesquiterpene
$\alpha$ -Humulene	23.42	1434	0.05	0.06	1578	12.26	Sesquiterpene
<i>trans</i> - $\beta$ -Farnesene	24.52	1447	0.10	0.15	1612	13.77	Sesquiterpene
Germacrene D	25.62	1460	0.12	[3.91]	1616	14.00*	Sesquiterpene
Bicyclogermacrene	26.87	1475	0.17	0.18	1635	14.98	Sesquiterpene
( <i>E</i> )-Nerolidol	33.98	1571	3.10	3.30	1979	36.17	Sesquiterp. alcohol
(2 <i>E</i> ,6 <i>E</i> )-Farnesol	40.77	1723	2.11	2.49	2275	44.71	Sesquiterp. alcohol

para-Camphorene	47.64	1967	0.11	0.08	2183	42.52	Diterpene
<b>Total identified</b>			<b>98.29%</b>	<b>98.76%</b>			

\*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

Note: no correction factor was applied

#### OTHER DATA

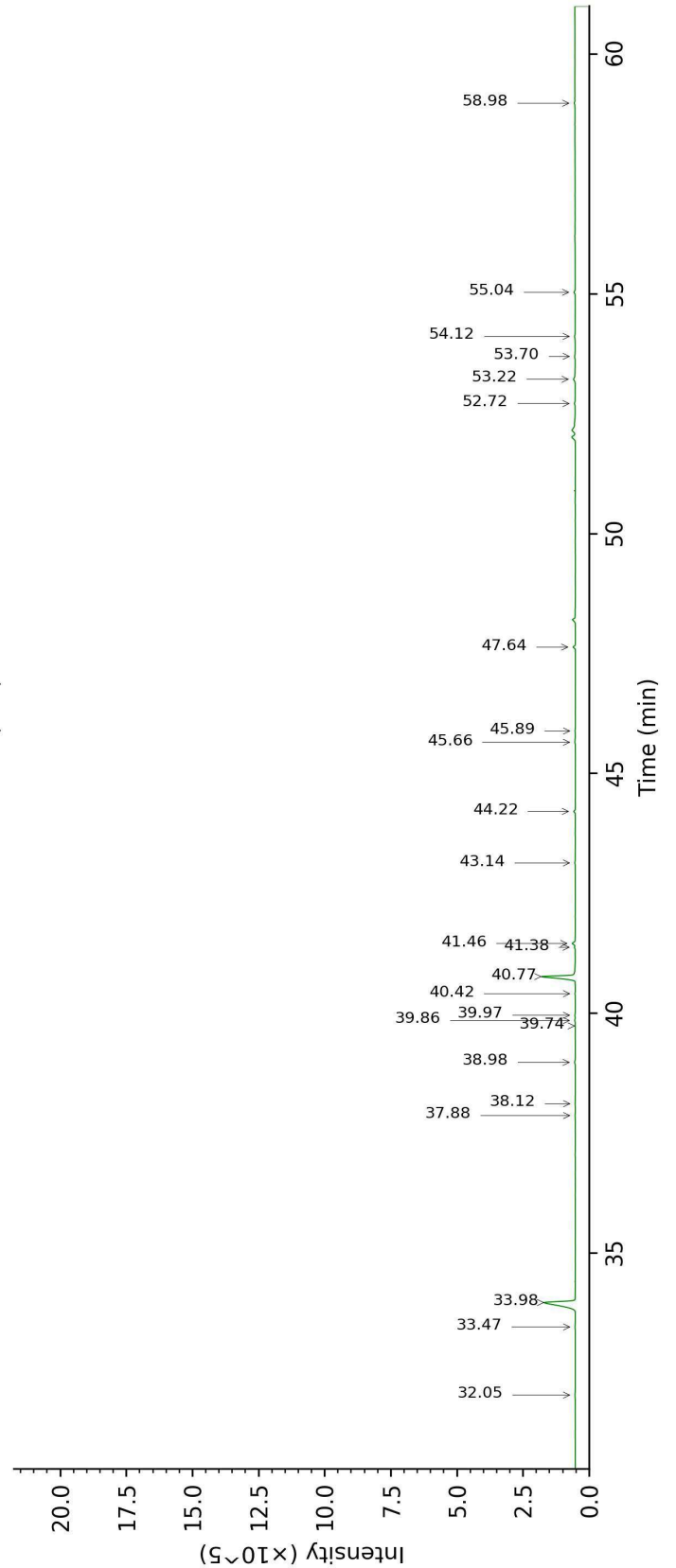
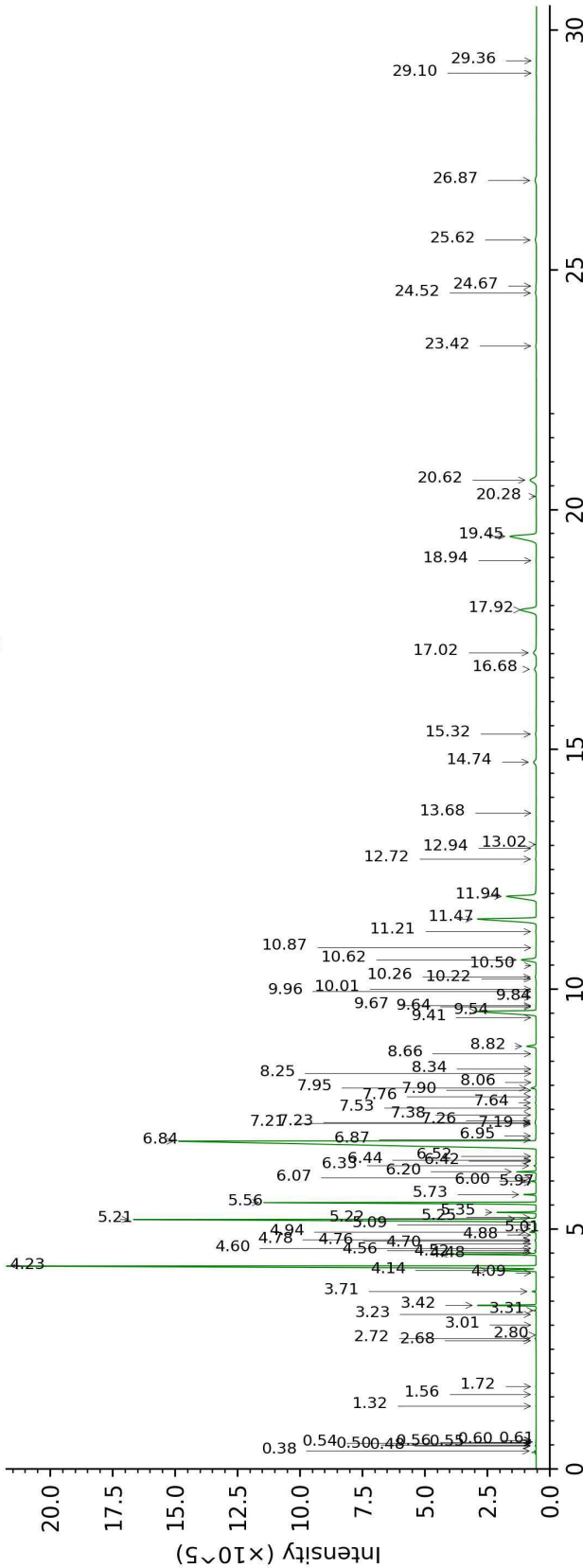
**Physical aspect :** Light yellow liquid

**Refractive index :** 1.4703 ± 0.0003 (20 °C)

#### CONCLUSION

No adulterant, contaminant or diluent were detected using this method.

17129-PTH12-1-CC\_BP5



17129-PTH12-1-CC\_WAX

