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Certificate of Analysis & Gas Chromatography Organic Petitgrain Essential Oil (*Citrus aurantium*)

Batch Number : 230818-2
Country of Origin : Paraguay

Date de création : 26/04/2011
Date de révision : 14/05/2014
Version n° : 03.00

Botanical name:	<i>Citrus aurantium</i> L. ssp. <i>amara</i> var. <i>pumilia</i>
INCI :	CITRUS AURANTIUM LEAF OIL (Syn : CITRUS AURANTIUM AMARA LEAF/TWIG OIL)
Certifications :	Organic food product from organic farming certified by FR-BIO-01
How to obtain:	Obtained by steam distillation of the leaves and twigs of : <i>Citrus aurantium</i> L. ssp. <i>amara</i> var. <i>pumilia</i>

CONSERVATION AND DDM

Minimum Durability Date: End 2020
Store in closed containers well, protected from light and at a stable, moderate temperature.
Handle in a well-ventilated room away from sources of ignition and heat.

ORGANOLEPTIC CHARACTERISTICS

Internal Method Analysis

Property	Result	Specification
Aspect :	Liquid	Liquid
Colour :	Pale yellow	Pale yellow to yellow brown
Odour :	Green	Fresh, green and floral

PHYSICAL CHARACTERISTICS

Analysis according to PE method in force.

Analysis	Result	Specification	Conditions of analysis
Density @ 20°C :	0,887	0,882 à 0,894	measured by an oscillating tube densimeter @ 20°C
Refractive index @ 20 °C :	1,458	1,457 à 1,467	measured @ 20 ° C under cold light
Rotating power @ 20 °C :	-3°	-6° à -1°	measured @ 20 ° C under a thickness of 1dm at the sodium wavelength D ($\lambda = 589.3\text{nm}$)

CHROMATOGRAPHIC PROFILE

• Interpretation of the profile: In Appendix

• Comments :	
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OBSERVATION

The validity and use of this Analysis Bulletin are reserved for this lot only, the results shown here correspond to those obtained at the time of the analysis. Date d'analyse : sept.-17

INTERPRETATION OF THE CHROMATOGRAPHIC PROFILE

Composants	Résultats (%)	Spécifications (%)
α pinene	0,20	
β pinene	1,23	
sabinene	0,29	
δ 3 carene	0,51	
myrcene	2,19	
<i>limonene</i>	1,09	
β phellandrene	0,07	
cis β ocimene	0,81	
trans β ocimene	2,50	
terpinolene	0,50	
<i>linalol</i>	24,79	18,00 à 32,00
linalyl acetate	48,06	36,00 à 57,00
terpinen-4-ol	0,11	
β caryophyllene	0,87	
α humulene	0,18	
<i>neral</i>		
α terpineol	5,59	3,00 à 8,00
neryl acetate	2,23	
<i>geranial</i>	0,13	
bicyclogermacrene	0,30	
geranyl acetate	3,87	2,00 à 6,00
nerol	1,22	
<i>geraniol</i>	3,04	

Conditions of chromatographic analysis

CG: performed on a 7890B device

by the Internal laboratory

Column : DB-WAX , 20 m, 100 μ m, 0.2 μ m

Oven temperature: 60°C (2 min) 12°C/mn 248°C (5 min)

Integration: percentage of area - threshold: 0,05 %

Analytical conditions according to standards ISO 7609 (1985), 11024-1 (1998) and 11024-2 (1998).

The compounds are identified from the comparison of the retention times with those of standards derived from computerized and personal databases.

The% are calculated from the peak areas given by the GC / FID.

Injection : split - 279ml/mn

Detector temperature: 275 °C

Detector type: Flame ionization

Injected volume: 0,2 μ

Vector gas: Hydrogen - 0,7 ml/mn