

# Certification of analysis

## 1. PRODUCT IDENTIFICATION AND COMPOSITION

1.1 Product Name: Petitgrain oil

1.2 Botanical Name: Citrus aurantium var. amara

1.3 Batch no.: 245567

### TEST SPECIFICATION RESULT

## 2. PHYSICAL AND CHEMICAL PROPERTIES

2.1 Appearance: Colourless to dark orange liquid Conforms

2.2 Odour: Characteristic Conforms

2.3 Specific Gravity: 0.870 to 0.960 @ 20° C Conforms

2.4 Refractive Index: 1.445 to 1.472 @ 20° C Conforms

### CONSTITUENT SPECIFICATION RESULT

## 2. PHYSICAL AND CHEMICAL PROPERTIES

## 3. GAS CHROMATOGRAPH ANALYSIS

Alpha-thujene 0.01

Alpha-pinene 0.10

Sabinene 0.23

Beta-pinene 1.07

Myrcene 2.30

Alpha-phellandrene 0.05

Delta-3-carene 0.53

Alpha-terpinene 0.04

Limonene 0.96

1,8-cineole 0.04

Cis-beta-ocimene 0.84

Trans-beta-ocimene 2.48

Gamma-terpinene 0.05

Trans-linalool oxide 0.04

Terpinolene 0.49

Linalool 25.26

Terpinene-4-ol 0.10

Alpha-terpineol 4.71

Nerol 1.03  
Neral 0.10  
Linalyl acetate 52.21  
Geranial 0.14  
Methyl geranate 0.01  
Alpha-terpinyl acetate 0.10  
Neryl acetate 2.00  
Geranyl acetate 3.50  
Beta-caryophyllene 0.71  
Alpha-humulene 0.09  
Bicyclogermacrene 0.23

Note(1)Analytical conditions:GC Columns:Rxi-5SI 1 MS, Length:30.0m, Inside  
Diameter:0.25mm,  
Thickness:0.25  
Mass Spectrometer: Detector Type:Quadropole Ms, Ion Source:EI, Ion Source Temp:200.0C  
Oven Temp Program:Rate:5.0Temperature(Degree):50.0-270.0