

Certification of analysis

1. PRODUCT IDENTIFICATION AND COMPOSITION

1.1 Product Name: Mandarin

1.2 Botanical Name: Citrus reticulata TEST SPECIFICATION RESULT

2. PHYSICAL AND CHEMICAL PROPERTIES

2.1 Appearance: Clear free flowing liquid Conforms

2.2 Odour: Characteristic Conforms

2.3 Specific Gravity: 0.840 to 0.865 @ 20° C Conforms

2.4 Refractive Index: 1.4600 to 1.4850 @ 20° C Conforms

2.5 Optical rotation: +70.00 to 100.00 Conforms

CONSTITUENT SPECIFICATION RESULT

3. GAS CHROMATOGRAPH ANALYSIS

Citrus reticulata

Alpha-thujene 0.07

Alpha-pinene 0.66

Sabinene 0.32

Beta-pinene 0.16

Myrcene 1.77

n-octanal 0.15

alpha-phellandrene 0.03

delta-3-carene 0.04

alpha-terpinene 0.03

p-cymene 0.14

limonene 94.17

trans-beta-ocimene 0.10

gamma-terpinene 1.42

terpinolene 0.07

linalool 0.15

n-nonanal 0.03

citronellal 0.03

alpha-terpineol 0.02

n-decanal 0.17

alpha-copaene 0.02
beta-elemene 0.10
beta-caryophyllene 0.01
germacrene D 0.04
(E,E)-alpha-farnesene 0.11
Delta-cadinene 0.03
Alpha-sinensal 0.03

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