Aromatic Plant Research Center

We provide uncompromising
quality control for your products.

Customer: doTERRA International
Lot Number: 180228
Date Filled: 1/22/2018

Column: ZB5 (60 m length × 0.25 mm inner diameter × 0.25 µm film thickness)
Instrument: Shimadzu GCMS-QP2010 Ultra
Carrier gas: Helium 80 psi
Temperature ramp: 2 degrees celsius per minute up to 260-degrees celsius
Split ratio: 30:1
Sample preparation: 5%w/v solution with Dichloromethane.

Comments:
The analysis of this Clove Bud lot revealed no contaminants or adulteration.
The sample meets the expected chemical profile for authentic essential oils of *Eugenia caryophyllata*.

CERTIFIED BY AROMATIC PLANT RESEARCH CENTER

© Copyright 2017 Aromatic Plant Research Center. All rights reserved.
Any publishing, copying, use, dissemination, or distribution of this report, including online, without the express written permission of Aromatic Plant Research Center is strictly prohibited.

Clove Bud Essential Oil

APRC
Aromatic Plant Research Center

Customer: doTERRA International
Lot Number: 180228
Date Filled: 1/22/2018

Chromatogram

Peak Report

Ret.Time	Compound Name	Area %
8.797	Furfural	0.01
19.741	cis-beta-Ocimene	0.05
19.925	trans-beta-Ocimene	0.04
30.072	Methyl salicylate	0.16
41.108	Eugenol	79.22
42.474	alpha-Ylangene	0.07
44.081	beta-Elemene	0.04
44.338	cis-Isoeugenol	0.02
44.436	cis-Caryophyllene	0.01
44.53	beta-Clovene	0.03
45.318	beta-Caryophyllene	4.09
47.086	trans-Isoeugenol	0.01
47.594	alpha-Humulene	0.51
50.562	trans-trans-alpha-Farnesene	0.02
51.293	Eugenyl acetate	15.19
51.434	delta-Cadinene	0.03
53.727	Isocaryophyllene oxide	0.03
55.31	Caryophyllene oxide	0.25
56.959	trans-Bisabol-11-ol	0.02
58.503	Caryophylla-4(12),8(13)-dien-5-alpha-ol	0.1
59.537	14-hydroxy-9epi-cis-Caryophyllene	0.07
60.33	Selin-11-en-4alpha-ol	0.01
60.365	14-hydroxy-9epi-trans-Caryophyllene	0.03

Area Total: **100**

Comments:
The analysis of this Clove Bud lot revealed no contaminants or adulteration.
The sample meets the expected chemical profile for authentic essential oils of *Eugenia caryophyllata*.

© Copyright 2017 Aromatic Plant Research Center.
All rights reserved. Any publishing, copying, use, dissemination, or distribution of this report, including online, without the express written permission of Aromatic Plant Research Center is strictly prohibited.