Aromatic Plant Research Center

We provide uncompromising
quality control for your products.

Customer: doTERRA International
Lot Number: 180578
Date Filled: 2/26/2018

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 Melaleuca lot revealed no contaminants or adulteration.
The sample meets the expected chemical profile for authentic essential oils of *Melaleuca alternifolia*.

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Melaleuca Essential Oil

Customer: doTERRA International
Lot Number: 180578
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Chromatogram

Peak Report

Ret.Time	Compound Name	Area %
12.6	alpha-Thujene	0.86
13.04	alpha-Pinene	2.21
15.279	Sabinene	0.39
15.608	beta-Pinene	0.73
16.206	Myrcene	0.89
17.34	alpha-Phellandrene	0.52
18.055	alpha-Terpinene	8.62
18.533	para-Cymene	1.59
18.812	Limonene	0.88
18.941	beta-Phellandrene	1
19.039	1,8-Cineole	2.58
20.822	gamma-Terpinene	18.27
22.566	Terpinolene	3.04
23.526	Linalool	0.07
23.673	trans-Sabinene hydrate	0.05
25.307	cis-para-Menth-2-en-1-ol	0.32
26.58	trans-para-Menth-2-en-1ol	0.23
29.511	Terpinen-4-ol	44.84
30.346	alpha-Terpineol	3.61
31.227	trans-Piperitol	0.13
39.496	delta-Elemene	0.07
40.496	alpha-Cubebene	0.06
42.07	Isoledene	0.05
42.417	alpha-Copaene	0.16
44.454	alpha-Gurjunene	0.32
45.274	beta-Caryophyllene	0.4
45.752	9-epi-cis-Caryophyllene	0.06
46.196	alpha-Maaliene	0.06
46.468	Aromadendrene	1.19
46.94	Selina-5,11-diene	0.15
47.131	trans-Murrola-3,5-diene	0.15
47.559	alpha-Humulene	0.09
47.825	Alloaromadendrene	0.58
48.567	cis-Cadina-1(6),4-diene	0.35
49.504	delta-Selinene	0.1
49.748	Viridiflorene	1.26
50.055	Bicyclogermacrene	1.32
50.21	alpha-Muurolene	0.15
51.405	delta-Cadinene	1.13
51.693	Zonarene	0.31
52.285	trans-Cadina-1,4-diene	0.19
54.085	Longipinanol	0.06
54.953	Spathulenol	0.05
55.502	epi-Globulol	0.38
56.006	Viridiflorol	0.12
56.138	Cubeban-11-ol	0.09
57.73	Eudesmol isomer	0.09
57.916	1-epi-Cubenol	0.14
58.173	Isospathulenol	0.06
58.767	Cubenol	0.08
	Area Total:	100

Comments:
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